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SERVICE MANUAL

NTSC
ATSC

DW3-D/F
CHASSIS

PA **No. 0226**

P50X901 / DW3-D
P50V701 / DW3-D
P50S601 / DW3-F

R/C: CLU-4372A	p/n HL02402	P50X901
R/C: CLU-4374A	p/n HL02404	P50V701
R/C: CLU-4373A	p/n HL02403	P50S601

SERVICE MANUAL REVISION HISTORY INFORMATION

DATE	REVISION #	REASON
Oct, 08, 2007	SM00001	FIRST ISSUE OF MANUAL
Nov, 12, 2007	CH1	Added Remote Control Info. How to enter Service Menu (Page 31)
Nov, 12, 2007	CH1	Added In-Depth 50AF1 Panel Troubleshooting Flowchart (Page 32)
Nov, 27, 2007	CH2	Added additional adjustment details about power supply (Page 48)
Dec, 05, 2007	CH3	Added note about power supply adjustment (Page 4)
Dec, 11, 2007	CH4	Added p/n for Logic PWB (Page 69)
Jan, 21, 2008	CH5	Corrected Front Bezel (F Cosmetics) Part Numbers (Page 28)
Feb, 09, 2008	CH6	Added Digital Module (Digi-Main) Block Diagram (Page 6-A)

SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT

Version 0226-6
Updated 02-09-08

PLASMA DISPLAY PANEL

MAY 2007

HHEA-MANUFACTURING DIVISION

HITACHI

Inspire the Next

SERVICE MANUAL

ATSC
NTSC

DW3-D/F
CHASSIS

PA **No. 0226**

P50X901 / DW3-D
P50V701 / DW3-D
P50S601 / DW3-F

R/C: CLU-4372A	p/n HL02402	P50X901
R/C: CLU-4374A	p/n HL02404	P50V701
R/C: CLU-4373A	p/n HL02403	P50S601

This ADDENDUM is made due to the new models P50X901 (DW3D), P50V701 (DW3D) and P50S601 (DW3F).
They are different to models P50H401 (DW3A), P50T501 (DW3A) and P50H4011 (DW3A). The Main difference is the panel, the X/V/S models use "AF1" Plasma Panel and the H/T Models use "AE1" Plasma Panel. Software (Digital Main PWB) is also different because of Plasma Panel difference.
Refer to Service Manual PA0224 when servicing X/V/S models in regards to other adjustments not covered in this addendum.
This ADDENDUM indicates only the differences and special considerations to be taken when servicing the X/V/S models.

TO GO TO A CHAPTER, CLICK ON ITS HEADING BELOW

CONTENTS

SPECIFICATIONS 2
ADJUSTMENTS (See below for Power Supply Adjustment Info.) 4
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REMOTE CONTROL “HOW TO ENTER SERVICE MENU” DW-1, 2 AND 3 31
IN DEPTH 55 INCH PANEL (50AF1) TROUBLESHOOTING FLOW CHARTS 32
REPLACING THE POWER SUPPLY INFORMATION and ADJUSTMENTS 48

CAUTION: These servicing instructions are for use by qualified service personnel only. To reduce the risk of Electric shock do not perform any servicing other than that contained in the operating instructions Unless you are qualified to do so. Before servicing this chassis, it is important that the service Technician read the “IMPORTANT SAFETY INSTRUCTIONS” in this service manual.

SAFETY NOTICE
USE ISOLATION TRANSFORMER WHEN SERVICING

Components having special safety characteristics are identified by a ⚠ on the schematics and on the parts list in this Service Data and its supplements and bulletins. Before servicing the chassis, it is important that the service technician Read and follow the “Important Safety Instructions” in this Service Manual.

SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT

Version 0226-6
Updated 02-09-08

PLASMA DISPLAY PANEL

MAY 2007 HHEA-MANUFACTURING DIVISION

SPECIFICATIONS

APPEARANCE

Model name	Series Name	Cabinet Design
P50X901	Director's	High Gloss Black/Frame, High Gloss Black/Bezel, High Gloss Hidden/SP
P50S601	UltraVision	High Gloss Black/Frame, Black/Bezel, High Gloss Hidden/SP
P50V701	UltraVision	High Gloss Black/Frame, Black/Bezel, High Gloss Hidden/SP

SYSTEM

No.	Model name	Channel coverage band			Reception system		
		VHF(ch)	UHF(ch)	CATV(ch)	NTSC	ATSC (8VSB)	64QAM/ 256QAM
1	P50X901	2~13	14~69	A-5~A-1, A~I,J~W,W+1~W+94	X	X	X
2	P50S601				X	X	X
3	P50V701				X	X	X

STRUCTURAL DIMENSIONS

No.	Model name	WIDTH [mm]	HEIGHT [mm]	DEPTH [mm]	WEIGHT [kg]	Note
1	P50X901	1250	885(817)	423(134)	50.9(44.8)	Without table top stand.
2	P50S601	1241.4	884(820.2)	422.7(129)	49.8(43.7)	
3	P50V701	1241.4	884(820.2)	422.7(129)	49.9(43.8)	

EXTERNAL TERMINALS AND JACKS

Model name	Rear										
	A/V IN	S IN	COMP. IN	HDMI	M OUT	A OUT	Subwoofer OUT	ANT IN	OPT OUT	DV IN IEEE 1394	POD CARD
P50X901	3	1	2	2	1	1	—	1	1	—	1
P50S601	3	1	2	2	1	1	—	1	1	—	—
P50V701	3	1	2	2	1	1	—	1	1	—	1

Model name	Front							Rear			
	A/V IN	S IN	COMP. IN	HDMI	Photo (SD)	Upgrade	DV IN	IR OUT	IR OUT /G-LINK	SWIVEL OUT	RS232C
P50X901	1	—	—	1	1	←Common	—	1	1	1	1
P50S601	1	—	—	1	1	←Common	—	—	(1: Service)	1	1
P50V701	1	—	—	1	1	←Common	—	1	1	1	1

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MAIN FEATURES

No.	Feature	P50 X901	P50 S601	P50 V701
1	Panel	AF1	AF1	AF1
2	Resolution	1920x 1080i	1920x 1080i	1920x 1080i
3	Front Filter with ARF (Transparency)	Mesh (36%)	Mesh (41%)	Mesh (36%)
4	Seine2	X	X	X
5	FRC (FC8)	X	–	X
6	One NTSC/ATSC Tuner	X	X	X
7	POD (Point Of Deployment)	X	–	X
8	PinP (Digital/External Analog SPLIT)	X	–	X
9	3 Picture Mode	X	X	X
10	Color Temperature Mode	4	4	4
11	Color Decoding Adjustment	X	–	–
12	Color Management Adjustment	X	–	–
13	7 Mode Aspect Ratio Interchangeable	X	X	X
14	EPG (G-GUIDE) Function	X	–	X
15	SD-card Photo Viewer	X	–	X
16	Audio Output	10W x2	10W x2	10W x2
17	Swivel	Power	Power	Power
18	AV NET, AV NET Learning	X	–	X
19	IR Pass Through	X	–	X
20	OSD Design	Direc.	B	C
21	Energy Star	–	–	–

POWER CONSUMPTION

MODEL NAME	INDICATED VALUE			PST [W]		CHASSIS
	Max. Rating	Max. Rating	(Average Rating)	Without POD	With POD	
P50X901	605W	5.7A	364W	0.6W	14W	DW3D
P50S601	587W	5.3A	350W	0.6W	-	DW3F
P50V701	605W	5.7A	364W	0.6W	14W	DW3D

SAFETY KEY COMPONENTS

Symbol.No. / P/N / Spec.	Model
F9A1 / P#FN00551 / Fuse 10A	P50X901, P50V701, P50S601

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ADJUSTMENTS

NOTE: The next adjustment procedure is only for the P50X901, P50V701 and the P50S601, refer to the service manual PA no. 0224 for all the other adjustments.

POWER SUPPLY Vs, Va VOLTAGE ADJUSTMENT CH 3

Since Power Supply **P#HA02202** is already adjusted by Manufacturer is not necessary to adjust any voltage.
Important Note: *Please don't move any control (potenciometer) on power supply since is already adjusted.*
See Page 48: Please see page 48 for additional Power Supply Adjustment Information.

VIDEO COLOR TEMPERATURE ADJUSTMENT - BLACK AND WHITE MODE.

-Preparation

(1) Set the output of signal generator to white raster (Ratio: 100%).
(2) Component signal (480i)
Video level: 0.7Vp-p
SYNC: 0.3Vp-p
Set-up level: 0V
(3) Input white raster signal into COMPONENT input terminal.
(4) Set user control to Day (Dynamic) mode (Picture mode).
(5) Confirm that the mode is set as 'Fa ctory setting mode'.
(6) Aspect: 4:3 Expanded.

-Adjustment

(1) Perform the following adjustment with the remote control.
(2) Set the CRT color analyzer (CA-100) at the center of the panel.
(3) Ensure that the adjustment parameters R/G/B DRIVE(B/W) are all set as FF.
(4) After receiving the PC signal, reduce the value of two (or only one) of the RGB adjustment parameters step down two (or one) among adjustment R/G/B DRIVE(B/W) and adjust the value shown below.

Specification Video Color temperature (B/W)
x = 0.335± 0.005 y = 0.343± 0.005 (Color temp: 5400K)

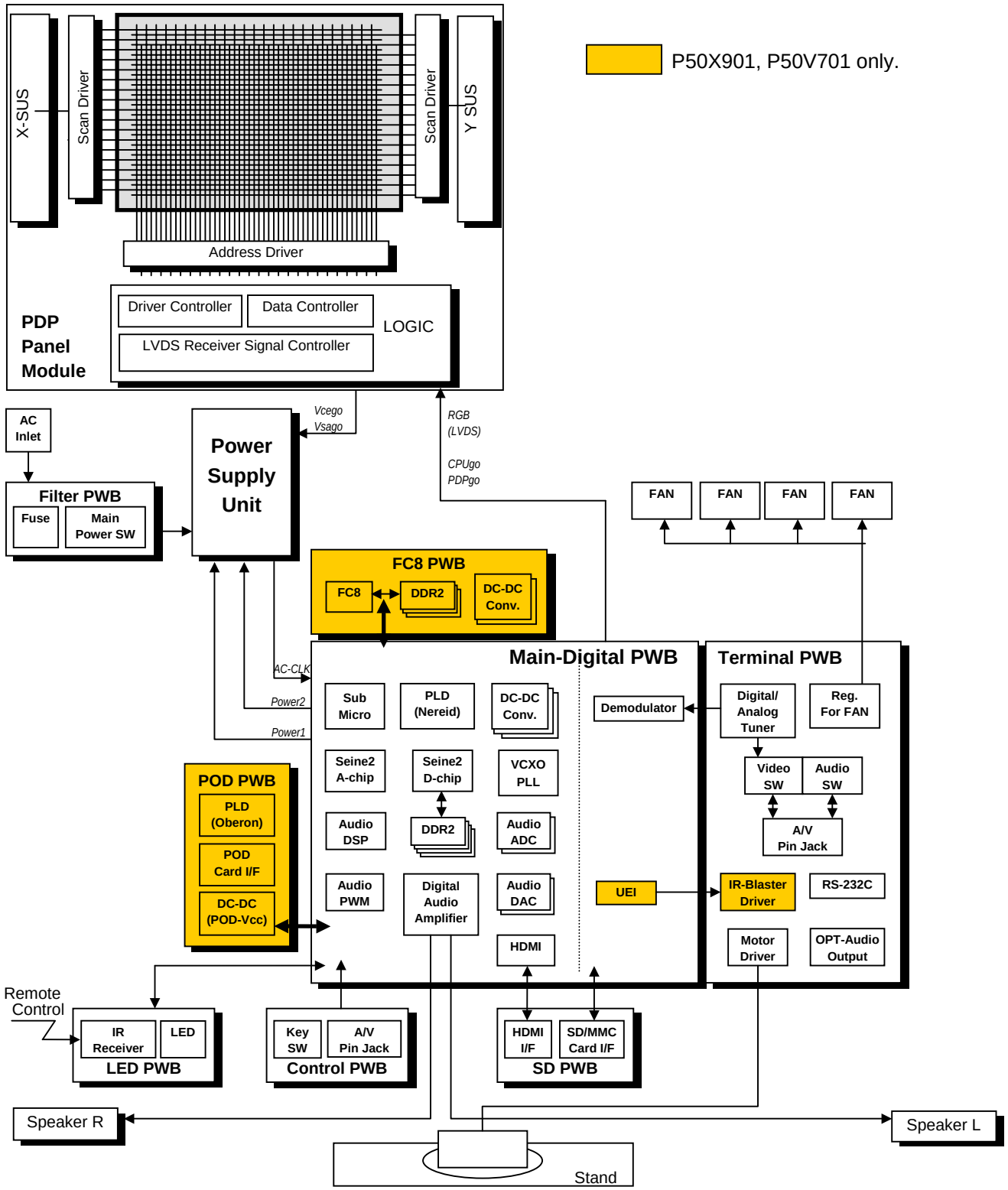
At least one of the data should be FF.

-Remarks

(1) Color temperature should be adjusted under the condition in which the screen is the brightest, thus the initial value for adjustment is set at its maximum.
(2) Adjustment is made by reducing brightness only. Reduce the brightest color for adjustment.
(3) Video color temperature & Adjustment number are the same, but addresses in the memory are different, thus there's no problem.
(4) When this adjustment item is done through MMC slot, Sniffer Jig must be inserted after the set is switched to Sniffer Mode. (the PC would have trouble if this sequence is not kept.)

BLOCK DIAGRAM

For P50X901, P50V701 and P50S601.



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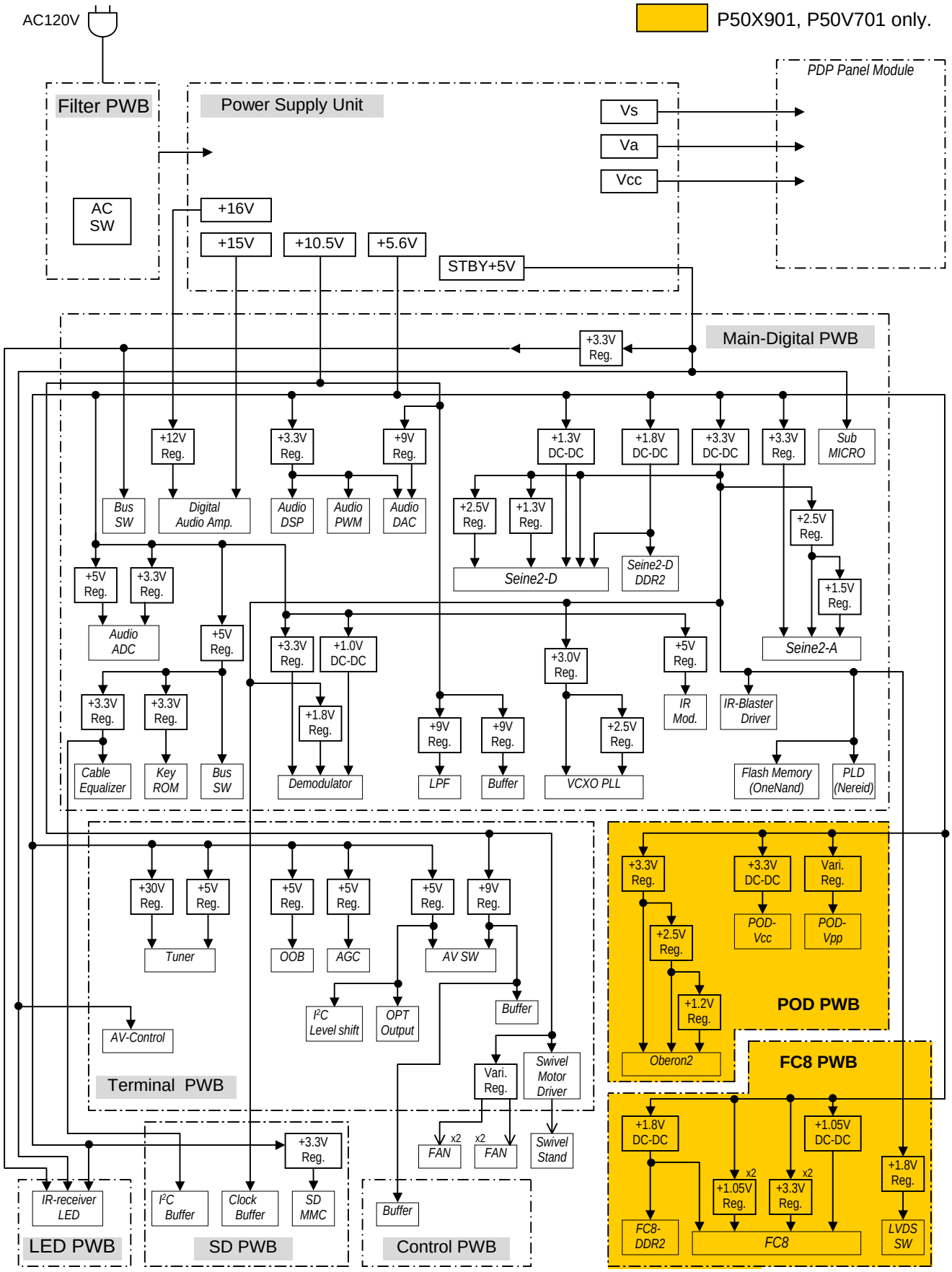
Power system block diagram



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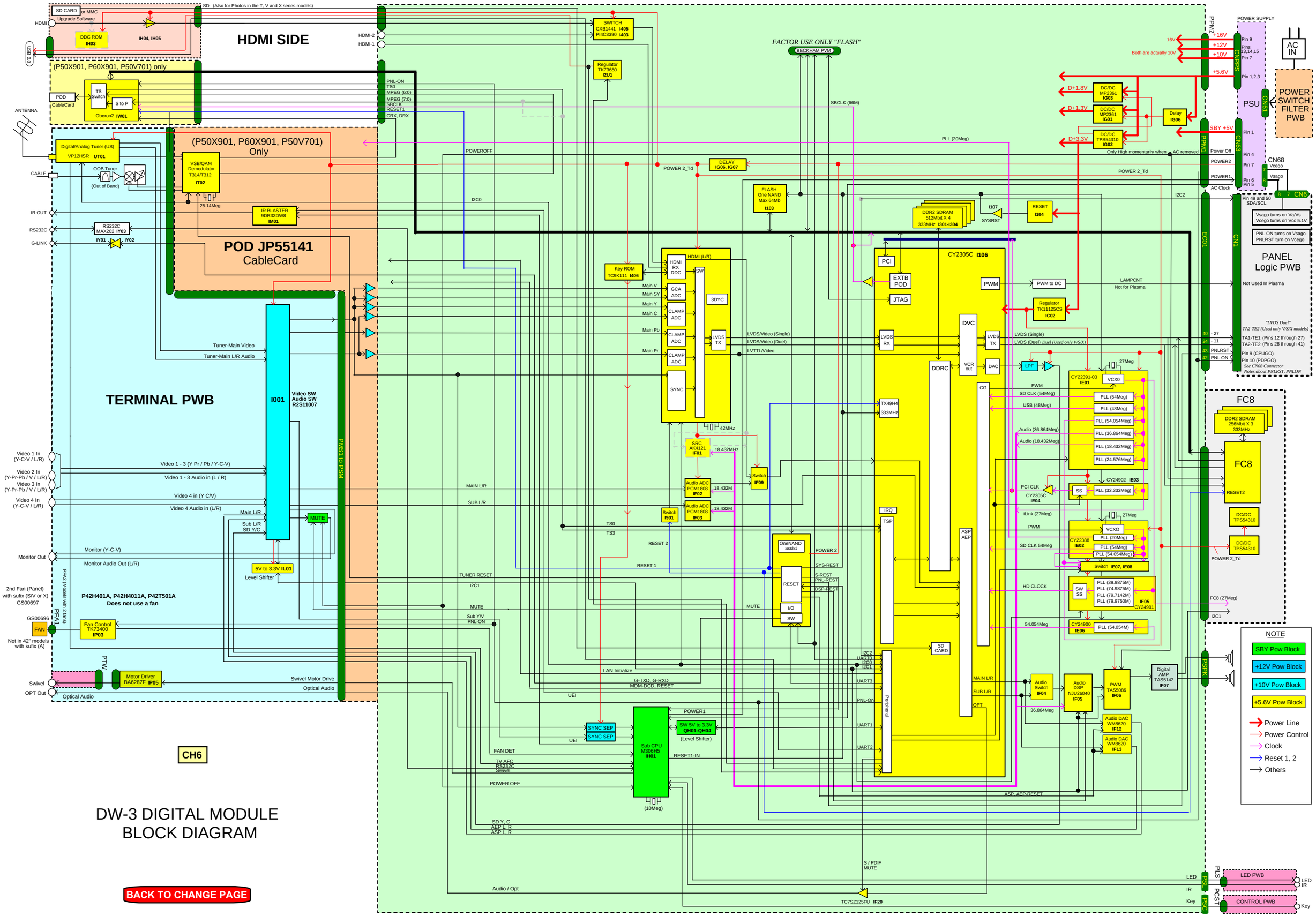


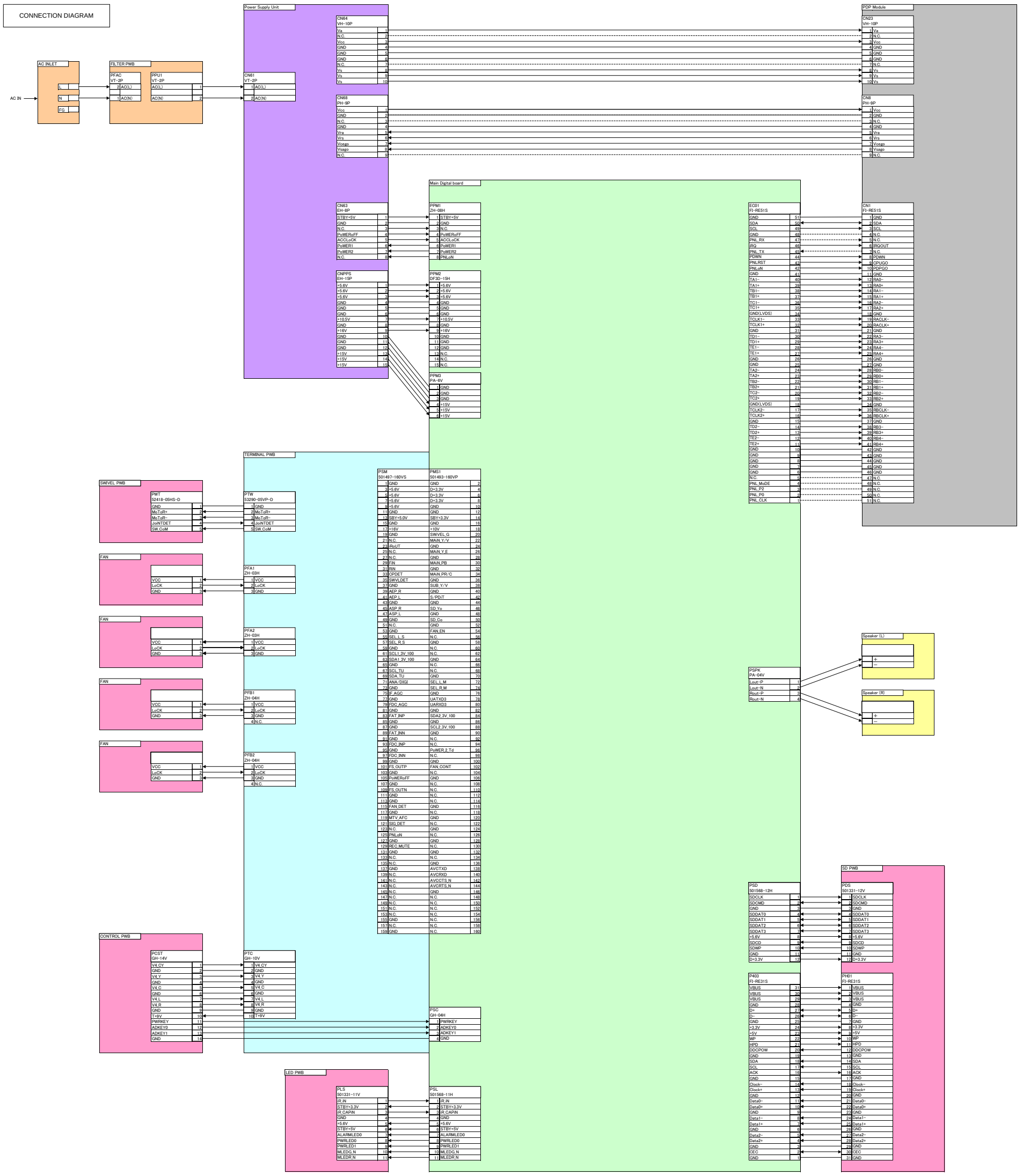
CH6

DW-3 DIGITAL MODULE BLOCK DIAGRAM

BACK TO CHANGE PAGE

CONNECTIONS DIAGRAM

For P50S601.



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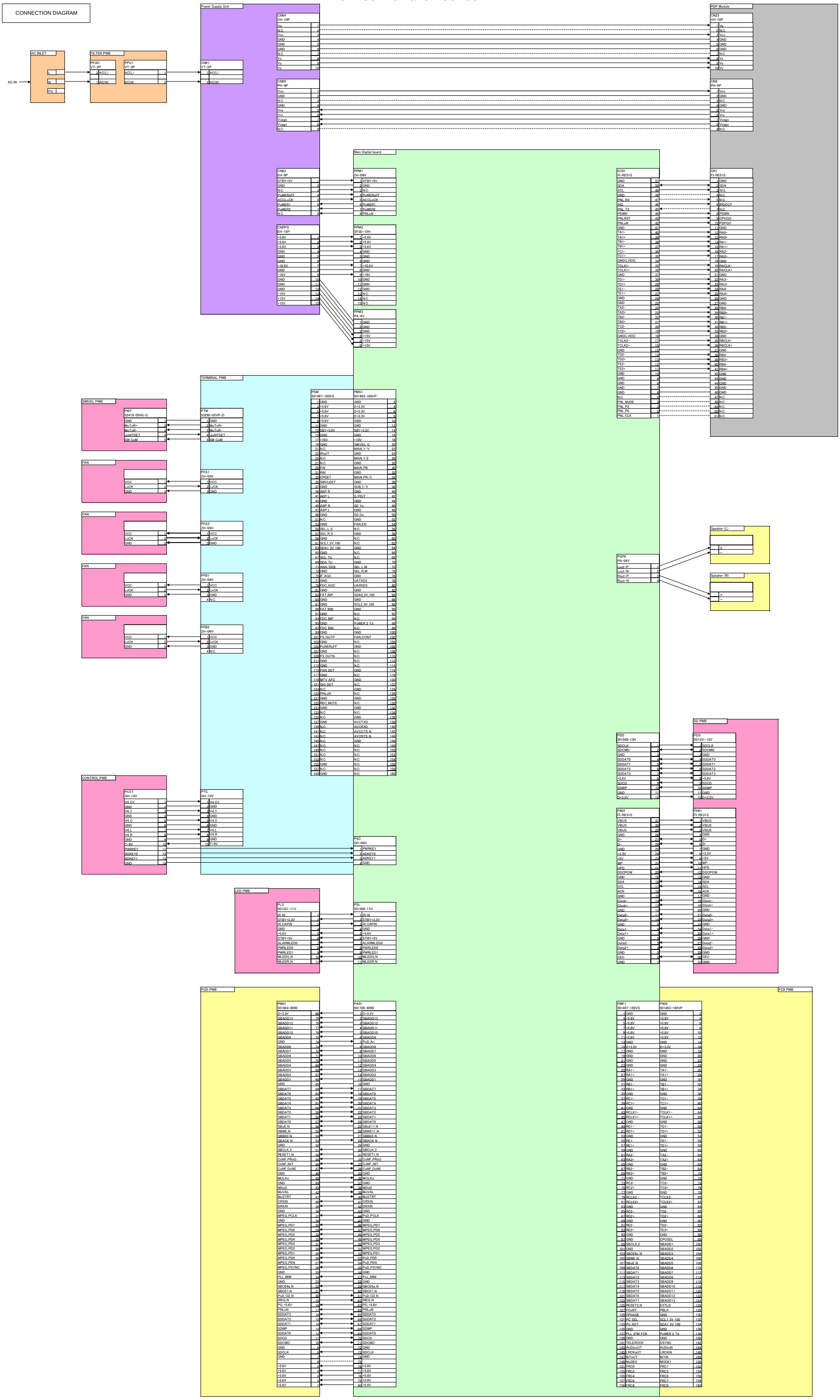
CONNECTIONS DIAGRAM

For P50V701 and P50X901



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FINAL WIRING DIAGRAM
FOR P50V701 AND P50S601

DW3

Table of Using cable

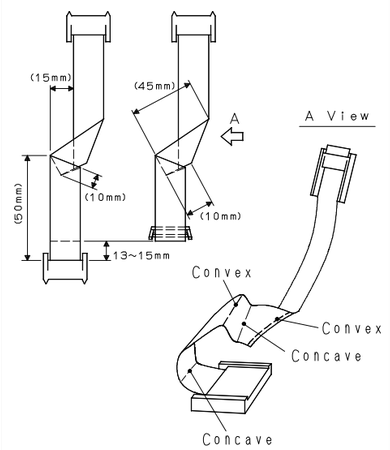
Connector wire		Plug Pin 1		Plug Pin 2	
Name	Assy List	Board or Location	Name	Board or Location	Name
ESTC	Final Ass'y	CONTROL	PCST	TERMINAL	PTC
				MAIN DIGITAL	PSC
ESL	Final Ass'y	MAIN DIGITAL	PSL	LED	PLS
ESD	Final Ass'y	MAIN DIGITAL	PSD	SD	PDS
EMP0	Final Ass'y	MAIN DIGITAL	PAR1	POD	PW01
EFA1	Final Ass'y	TERMINAL	PFA1	MFAN1	-
EFA2	Final Ass'y	TERMINAL	PFA2	MFAN2	-
EFB1	Final Ass'y	TERMINAL	PFB1	MFAN3	-
EFB2	Final Ass'y	TERMINAL	PFB2	MFAN3	-
ESP1	Final Ass'y	MAIN DIGITAL	PSPK	SP-L/R	SP-L
					SP-R
EPM1	Final Ass'y	POWER	CN63	MAIN DIGITAL	PPM1
EPM2	Final Ass'y	POWER	CNPPS	MAIN DIGITAL	PPM2
					PPM3
EPU1	Final Ass'y	POWER	CN61	FILTER	PPU1
ECN23	Final Ass'y	POWER	CN64	PANEL X-SUS	CN23
ECN6	Final Ass'y	POWER	CN68	PANEL LOGIC	CN6
ECN1	Final Ass'y	MAIN DIGITAL	ECN1	PANEL	CN1
EFAC	Final Ass'y	FILTER	PFAC	INLET	-
		SHASSIS Metal	GND		
EGND	Final Ass'y	SHASSIS Metal	-	PANEL BASE	-

Notice: (EMP0) is unnecessary for P50S601.

(EMH) Preparation

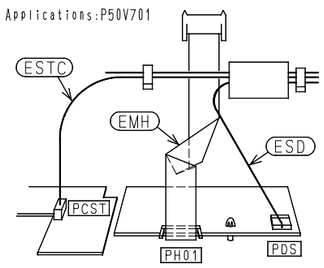
Applications:P50V701

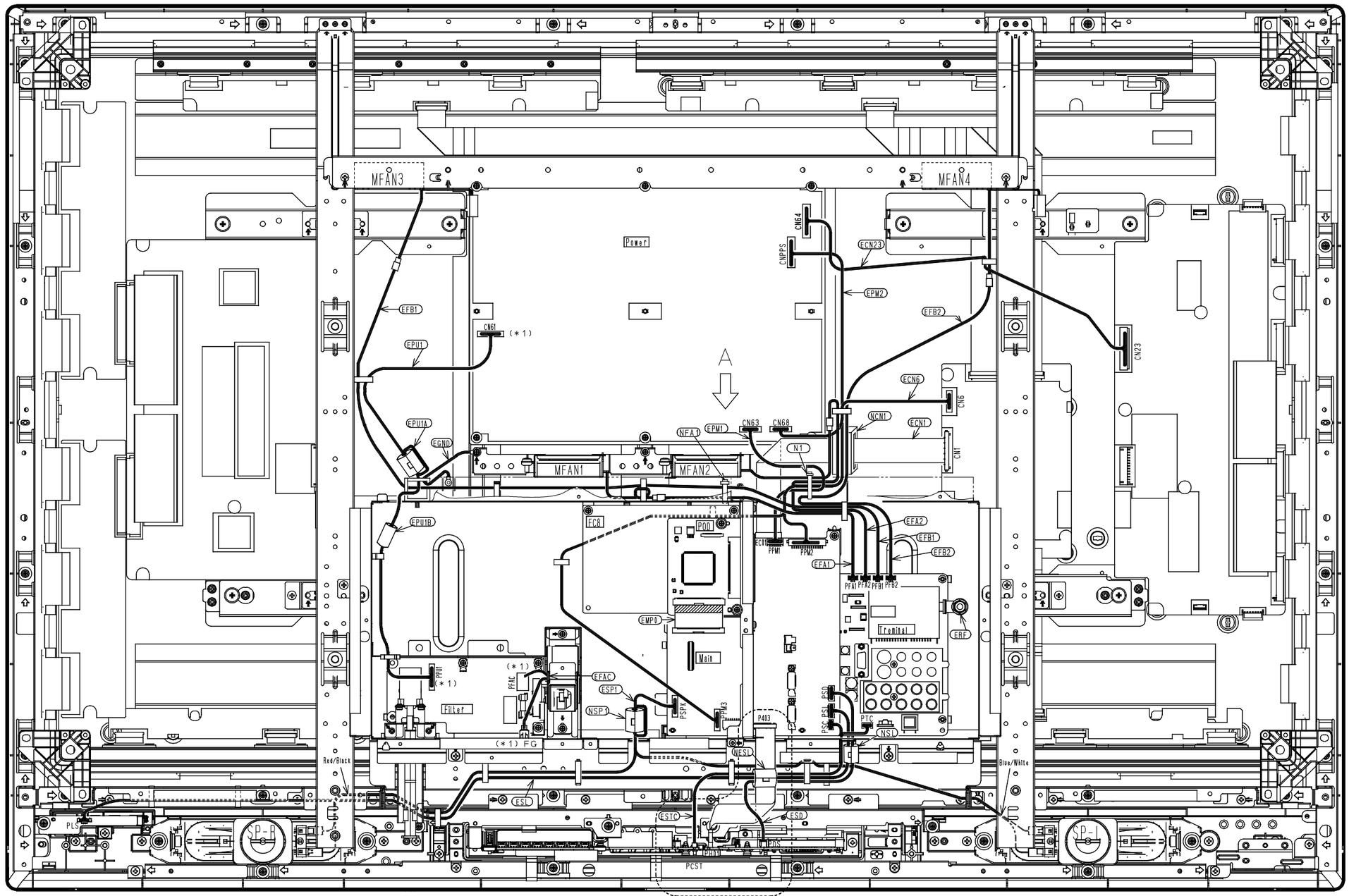
It bends as follows,and it forms.



Detail of Part B

Applications:P50V701





Part B

Specification

1. This drawing shows the wiring diagram for 50"FHD_PDP Chassis.
   The connection and wire styling are in the figure.
2. This drawing shows the rear view of the set.
3. Lock lead holders surely.
4. (EMP0) is unnecessary for P50S601.

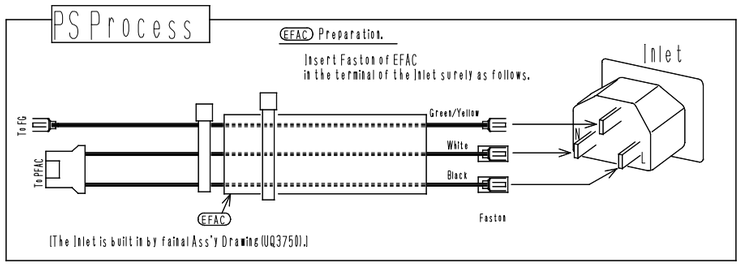
PS Process

(*1) Shown Part, CN61,PPU1,PFAC, and FG.
please confirm insertion in the terminal surely.

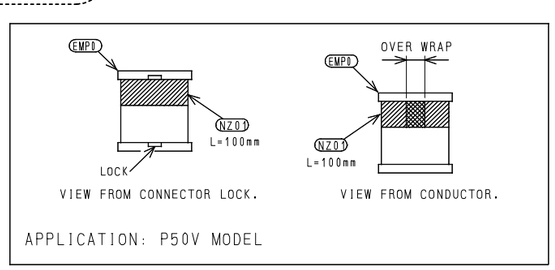
PS Process

(EFAC) Preparation.

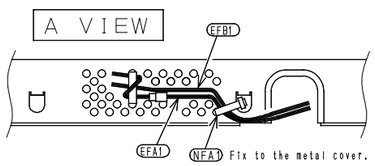
Insert Faston of EFAC
in the terminal of the Inlet surely as follows.



[The Inlet is built in by Fainal Ass'y Drawing (UQ3750).]



A VIEW



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FINAL WIRING DIAGRAM

P50X901

DW3

Table of Using cable

Connector wire		Plug Pin 1		Plug Pin 2	
Name	Assy List	Board or Location	Name	Board or Location	Name
ESTC	Final Ass'y	CONTROL	PCST	TERMINAL	PTC
				MAIN DIGITAL	PSC
ESL	Final Ass'y	MAIN DIGITAL	PSL	LED	PLS
ESD	Final Ass'y	MAIN DIGITAL	PSD	SD	PDS
EMP1	Final Ass'y	MAIN DIGITAL	PAR1	POD	PW01
EFA1	Final Ass'y	TERMINAL	PFA1	MFAN1	-
EFA2	Final Ass'y	TERMINAL	PFA2	MFAN2	-
EFB1	Final Ass'y	TERMINAL	PFB1	MFAN3	-
EFB2	Final Ass'y	TERMINAL	PFB2	MFAN3	-
ESP1	Final Ass'y	MAIN DIGITAL	PSPK	SP-L/R	SP-L
					SP-R
EPM1	Final Ass'y	POWER	CN63	MAIN DIGITAL	PPM1
EPM2	Final Ass'y	POWER	CNPPS	MAIN DIGITAL	PPM2
					PPM3
EPU1	Final Ass'y	POWER	CN61	FILTER	PPU1
ECN23	Final Ass'y	POWER	CN64	PANEL X-SUS	CN23
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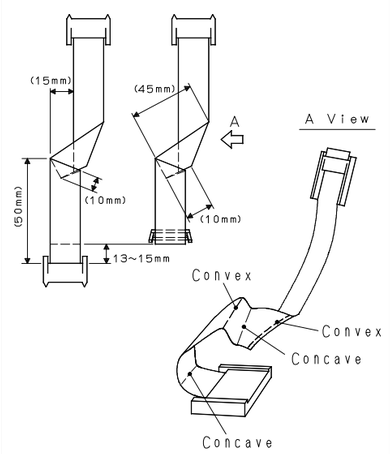
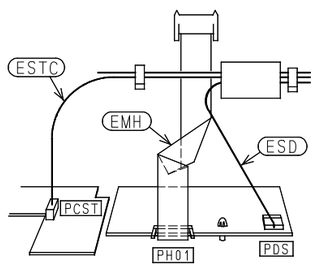
ECN1	Final Ass'y	MAIN DIGITAL	ECN1	PANEL	CN1
EFAC	Final Ass'y	FILTER	PFAC	INLET	-
		SHASSIS Metal	GND		
EGND	Final Ass'y	SHASSIS Metal	-	PANEL BASE	-

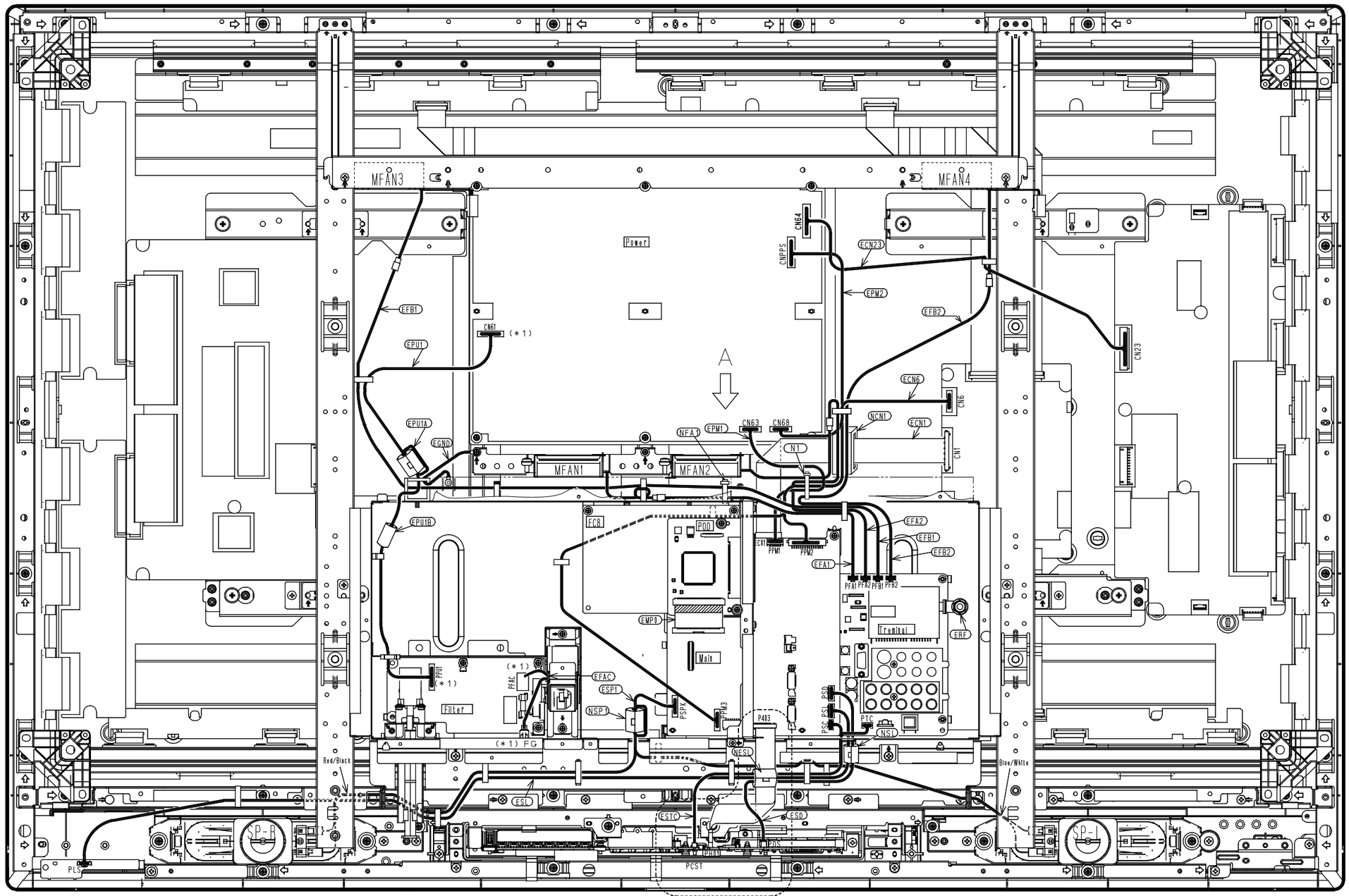
EMH Preparation

It bends as follows, and it forms.



Detail of Part B





Part B

Specification

1. This drawing shows the wiring diagram for 50"FHD_PDP Chassis. The connection and wire stylling are in the figure.
2. This drawing shows the rear view of the set.
3. Lock lead holders surely.

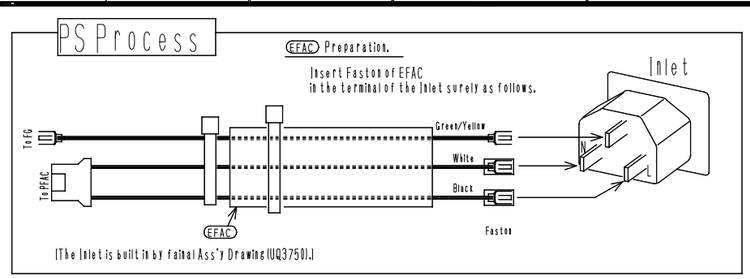
PS Process

(*1) Shown Part, CN61, PPU1, PFAC, and FG. please confirm insertion in the terminal surely.

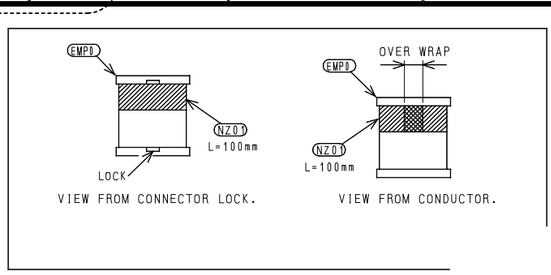
PS Process

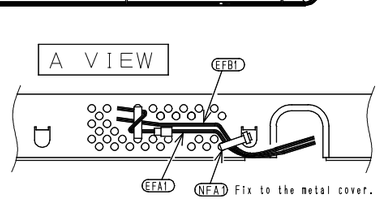
EFAC Preparation.

Insert Faston of EFAC in the terminal of the Inlet surely as follows.



[The Inlet is built in by Faltal Ass'y Drawing (UQ3750).]





QUICK DISASSEMBLE GUIDE(These two pages show diffrential points from H/T Models, other pages are common)

POWER UNIT, FAN ASSY(P50S601, P50V701, P50X901)

① Remove Screw M3M 3*8 P#MJ03598(4 pcs.)
Screw M3E 3*8 P#MJ03963(2 pcs.)

② Remove Power Unit P#HA02202

③ Remove Screw M3M 3*8 P#MJ03598(3 pcs.)
Power Fan Ass'y

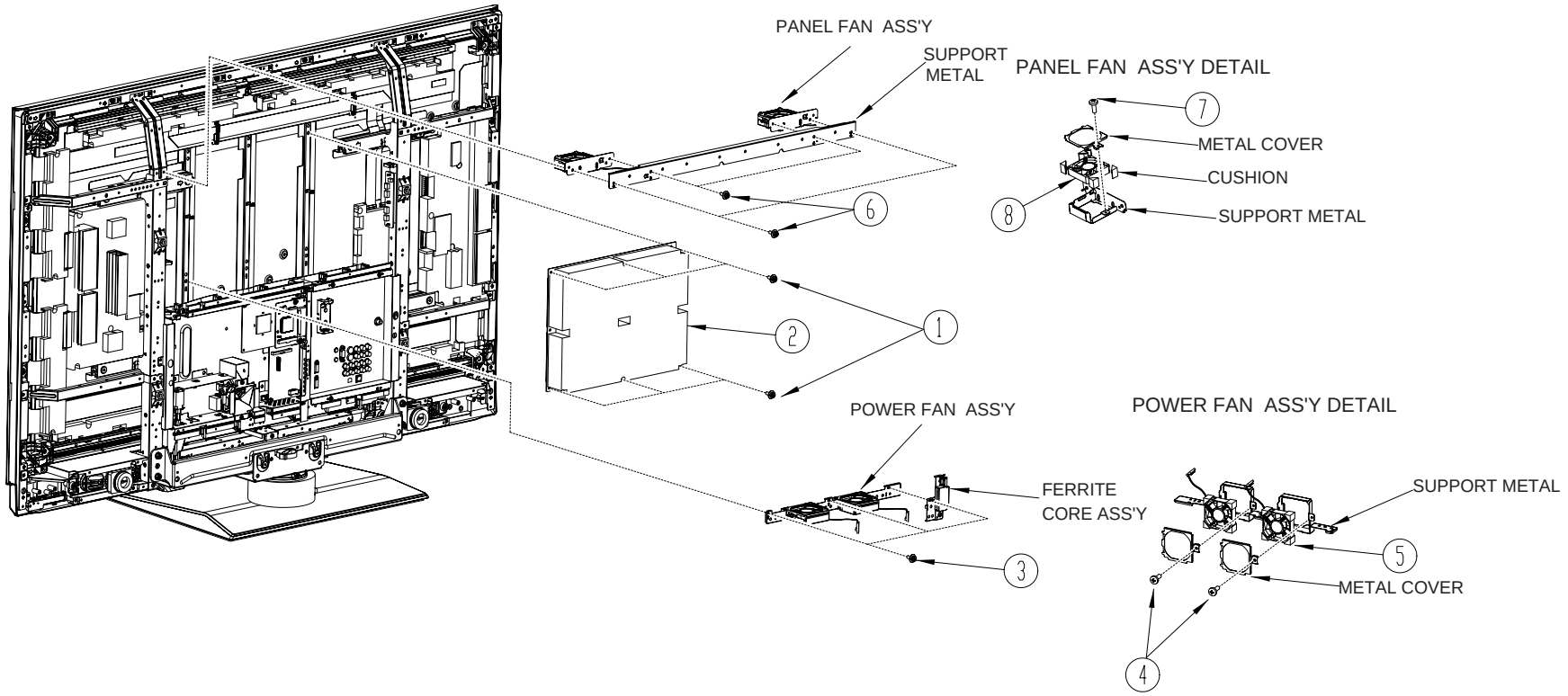
④ Remove Screw M3D 4*10 P#MJ03895(2 pcs.)

⑤ Remove Fan P#GS00696(2 pcs.)

⑥ Remove Screw M3D 4*10 P#MJ03895(2 pcs.)
Screw M3D 4*10 P#MJ04067(2 pcs.)
Panel fan Ass'y

⑦ Remove Screw M3D 4*10 P#MJ04067(2 pcs.)

⑧ Remove Fan P#GS00697(2 pcs.)



CHASSIS ASS'Y 2(P50V701, P50X901 ONLY)

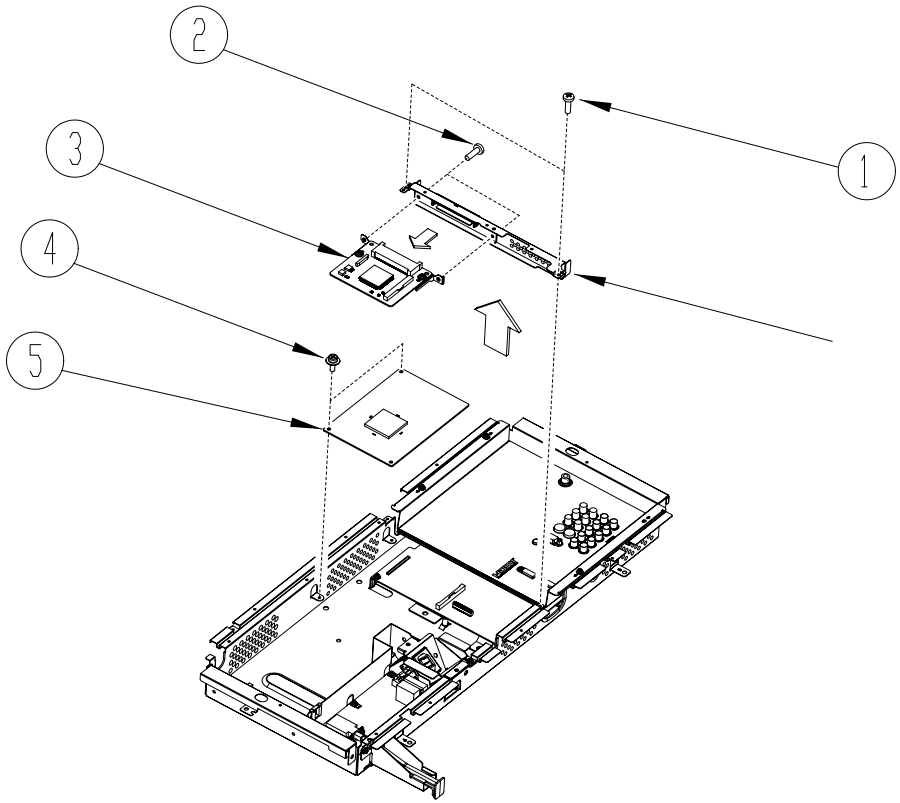
① Remove Screw M3E 3*8 P#MJ03467(2 pcs.)

② Remove Screw M3E 3*8 P#MJ03963(2 pcs.)

③ Remove POD PWB ASS'Y P#JP55141

④ Remove Screw M3E 3*8 P#MJ03467(2 pcs.)

⑤ Remove FC8 PWB ASS'Y P#JP56845



NOTES ABOUT THE SCHEMATICS.

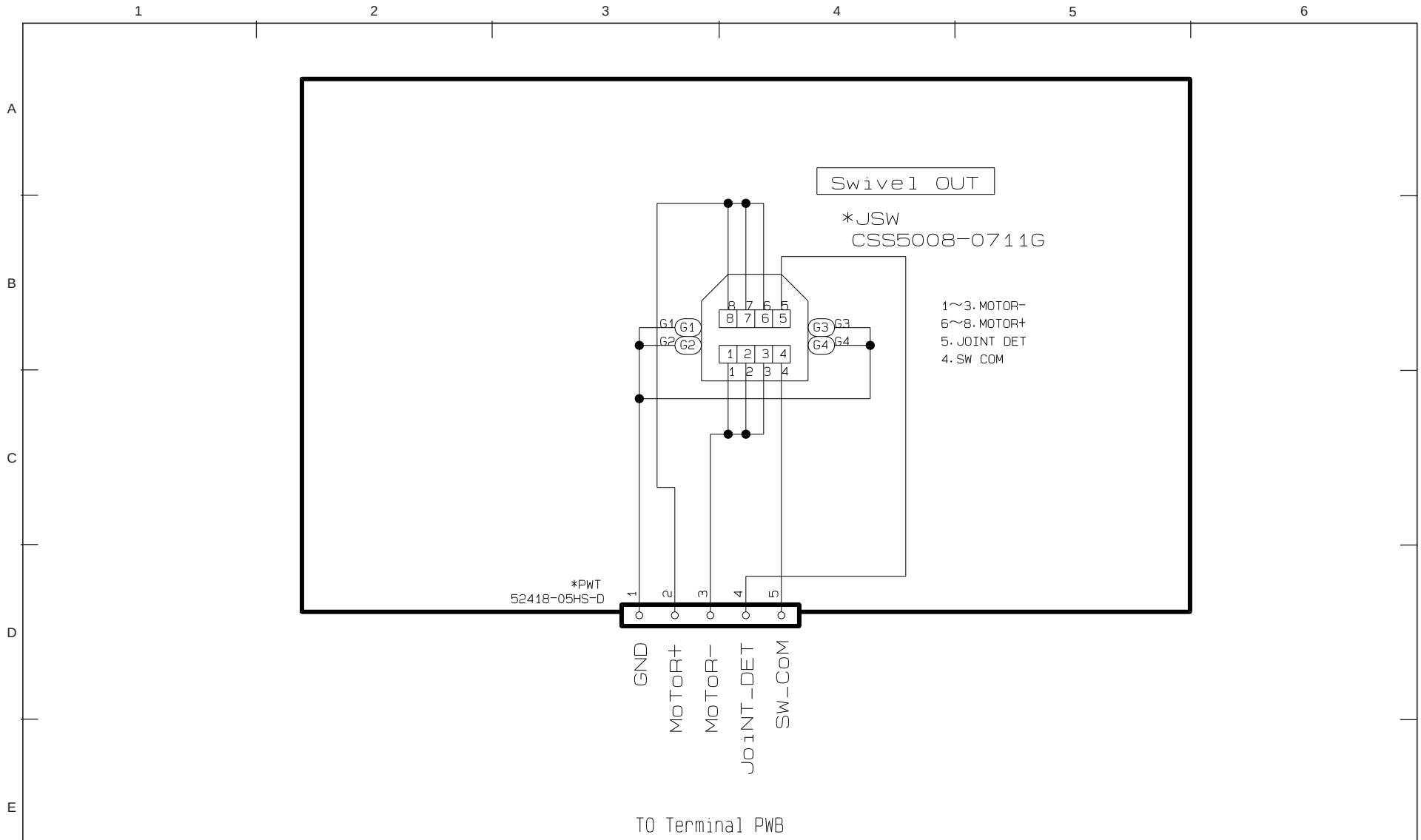
The schematic drawings included in this service manual addendum are:
1. Swivel board
2. Filter board
3. Terminal board
4. LED board for P50X901 and for P50V701
5. POD board for P50X901 and for P50V701

Refer to the service manual PA no. 0224 for the next additional schematic drawings:
1. Control board (for P50X901, P50V701 and P50S601)
2. SD board (for P50X901, P50V701 and P50S601)
4. LED board for P50S601

NOTES

BASIC CIRCUIT DIAGRAM

PRODUCT SAFETY NOTE: Components marked with a ⚠ and shaded have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.



For P50X901, P50V701 and P50S601

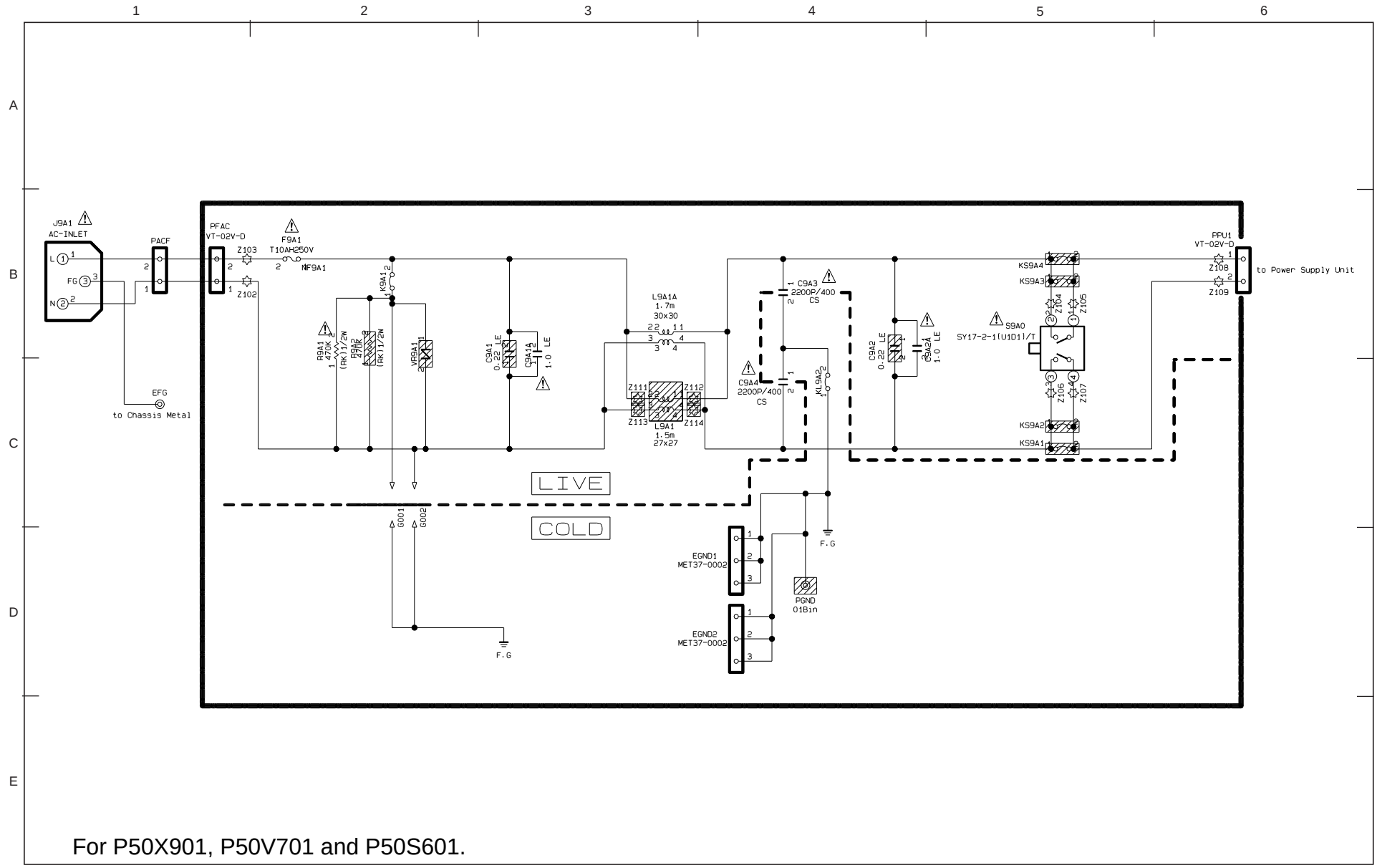
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

SWIVEL

NOTES ABOUT THE SCHEMATICS

BASIC CIRCUIT DIAGRAM

PRODUCT SAFETY NOTE: Components marked with a ⚠ and shaded have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.



For P50X901, P50V701 and P50S601.

- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

FILTER

NOTES ABOUT THE SCHEMATICS

BASIC CIRCUIT DIAGRAM

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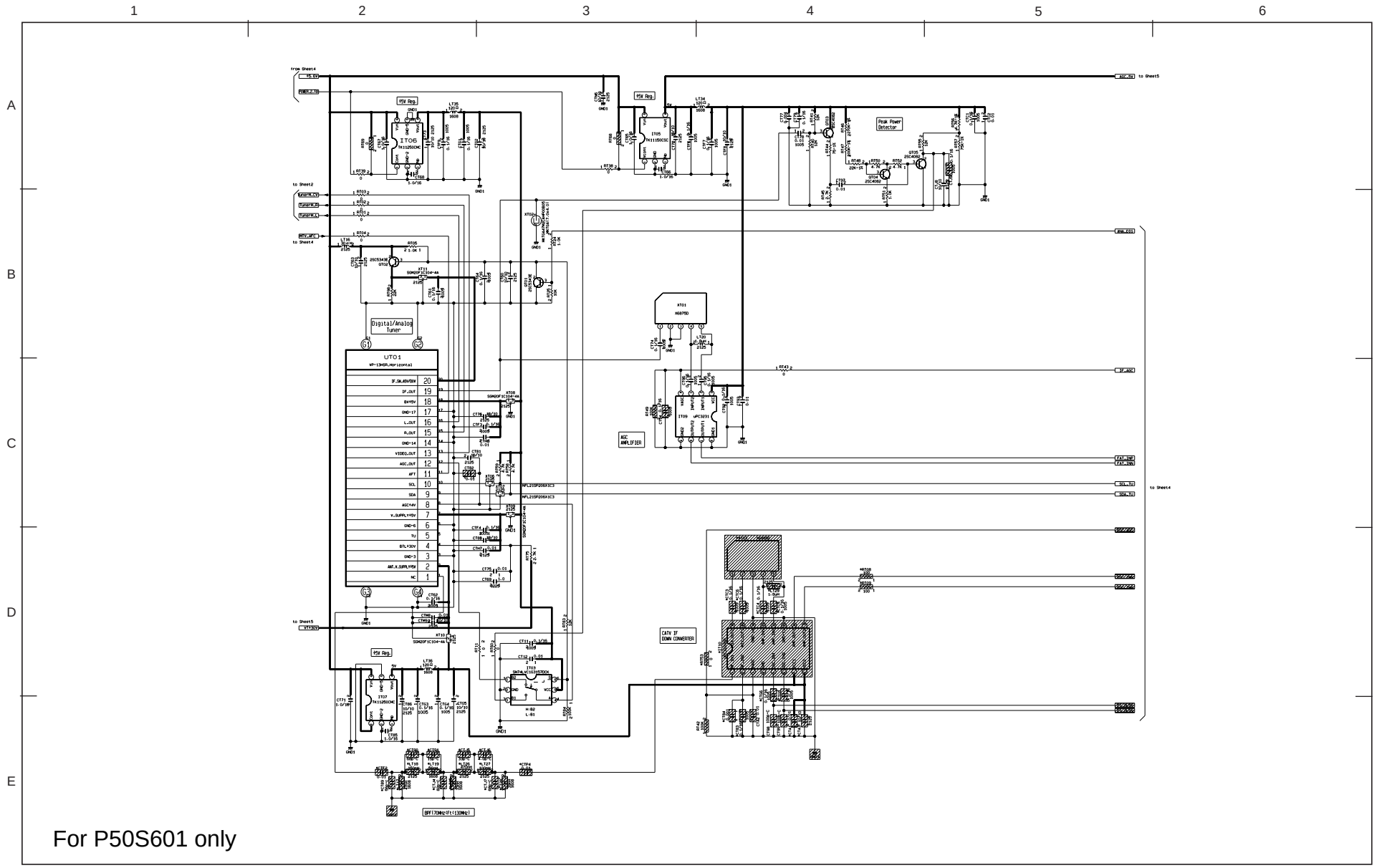

For P50S601 only

- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

TERMINAL

NOTES ABOUT THE SCHEMATICS

BASIC CIRCUIT DIAGRAM

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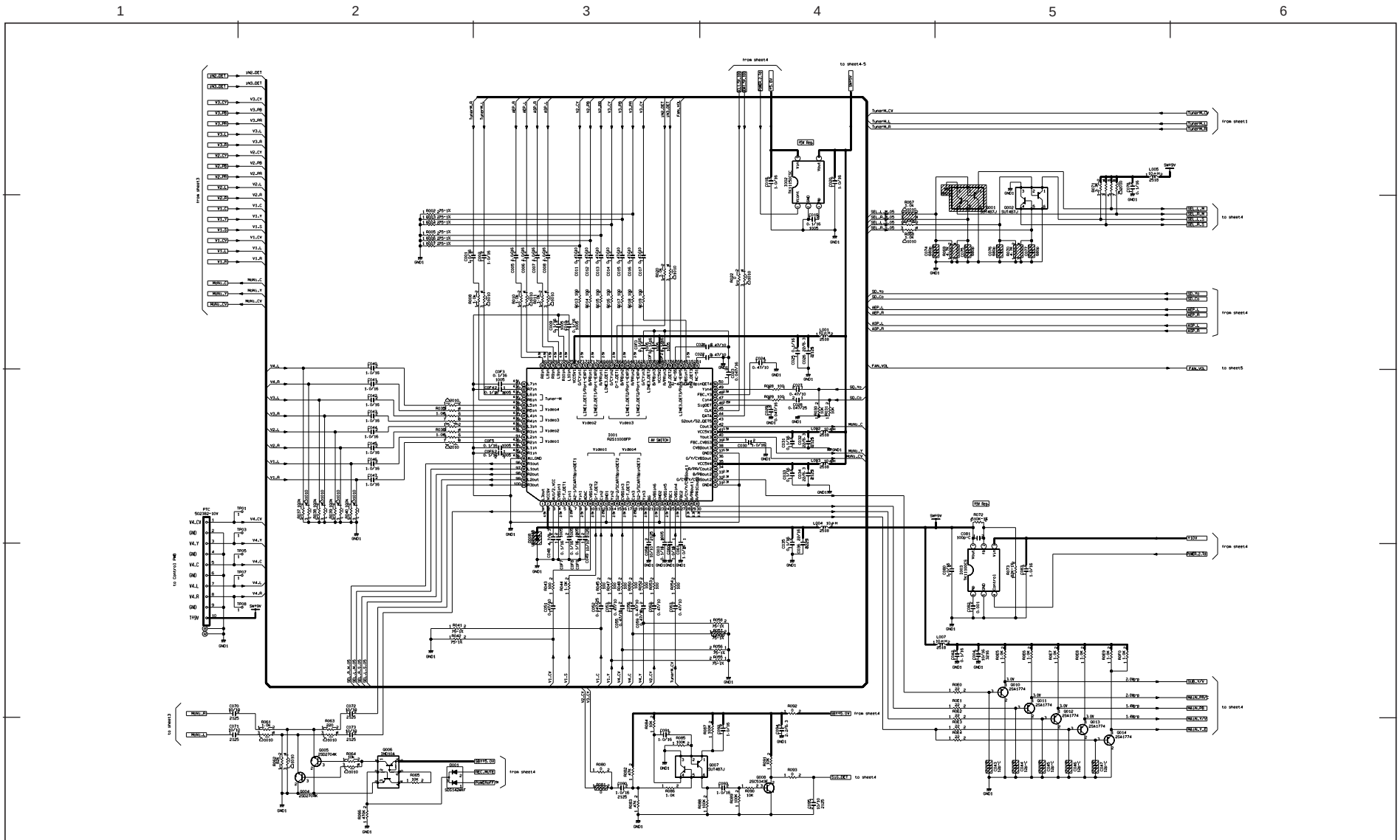

- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

TERMINAL

BASIC CIRCUIT DIAGRAM

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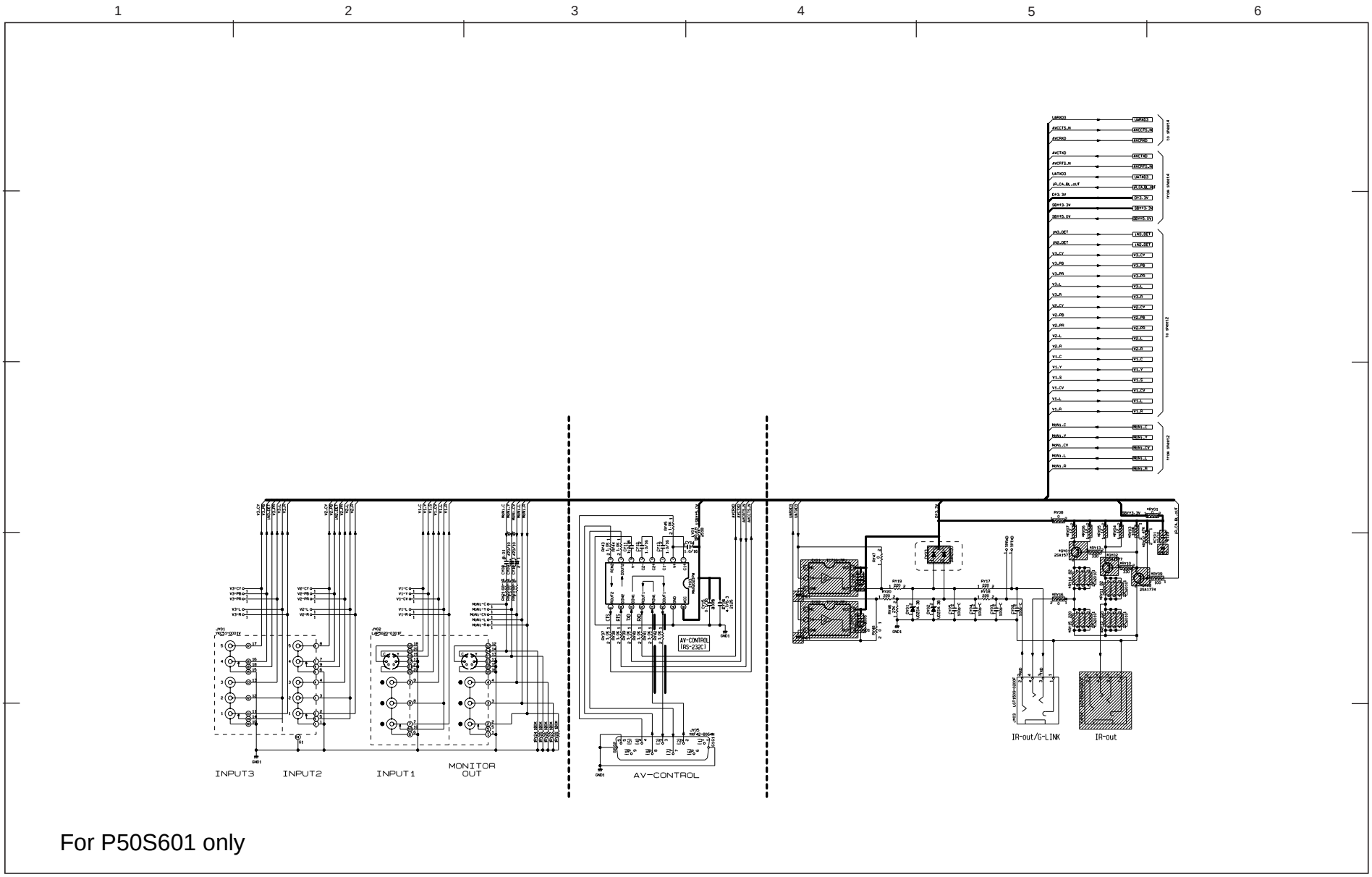


For P50S601 only

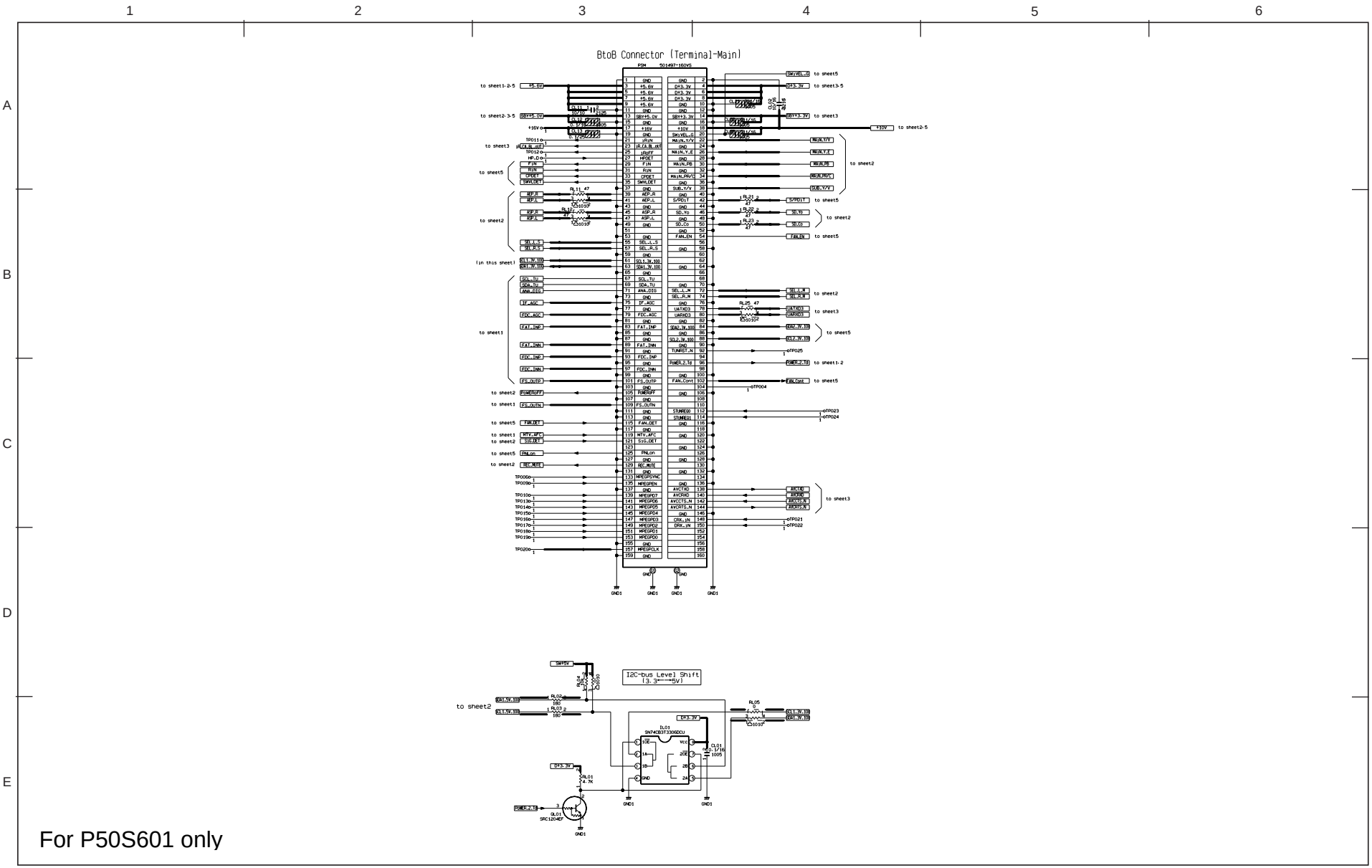
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

TERMINAL

NOTES ABOUT THE SCHEMATICS

BASIC CIRCUIT DIAGRAM

PRODUCT SAFETY NOTE: Components marked with a ⚠ and shaded have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.



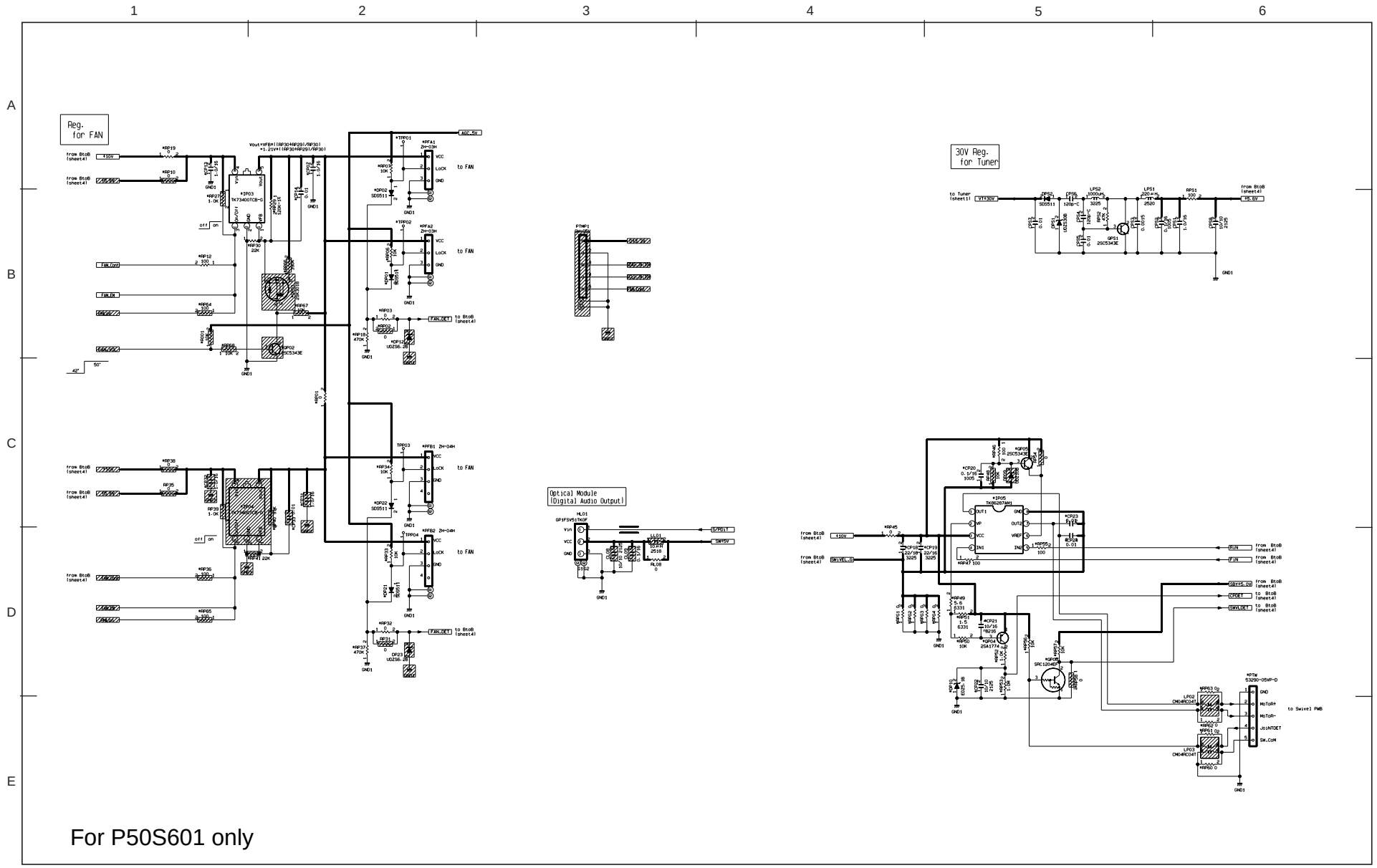
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

TERMINAL

NOTES ABOUT THE SCHEMATICS

BASIC CIRCUIT DIAGRAM

PRODUCT SAFETY NOTE: Components marked with a ⚠ and shaded have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.



- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

TERMINAL

NOTES ABOUT THE SCHEMATICS

BASIC CIRCUIT DIAGRAM

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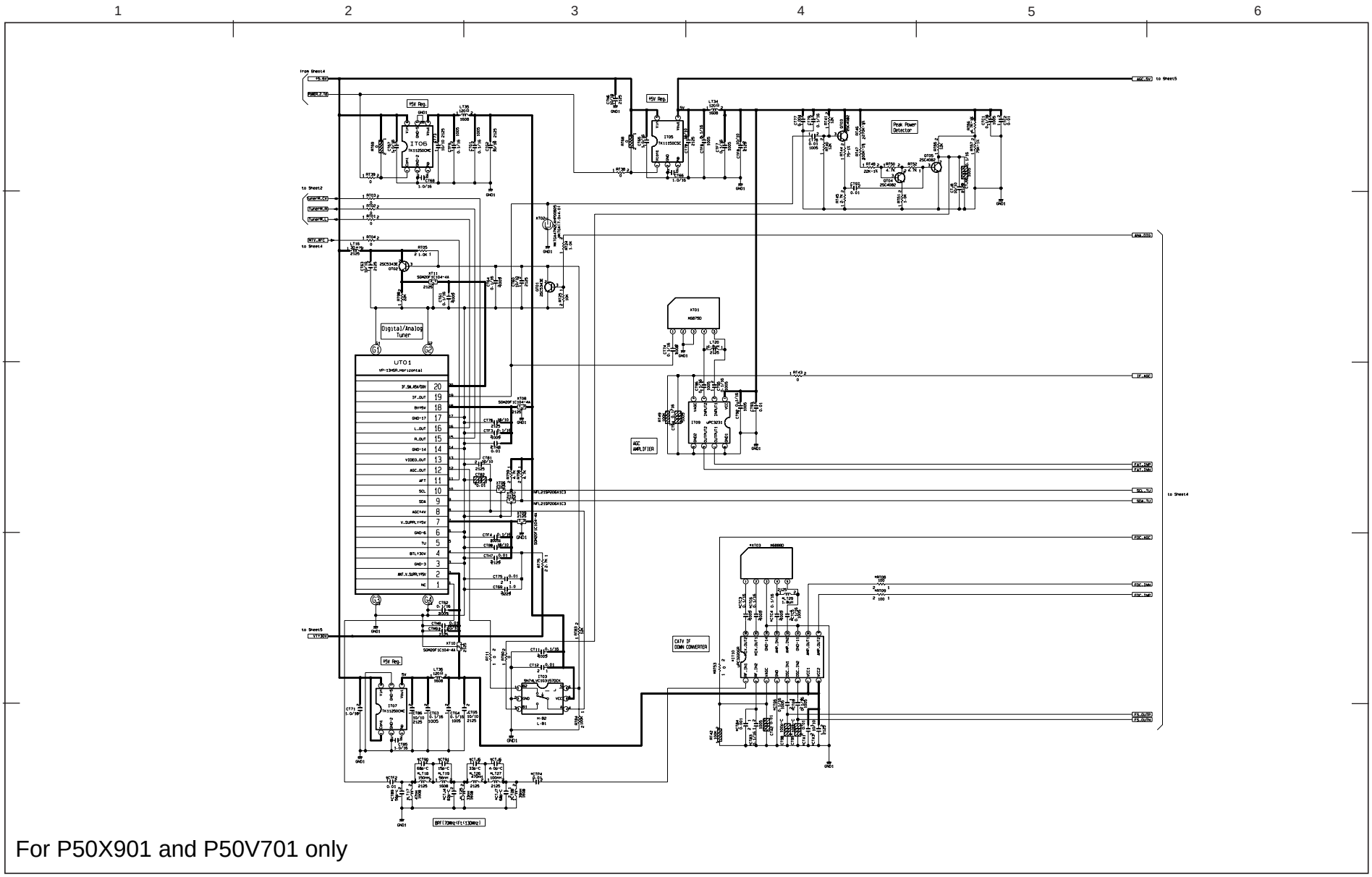

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TERMINAL

NOTES ABOUT THE SCHEMATICS

BASIC CIRCUIT DIAGRAM

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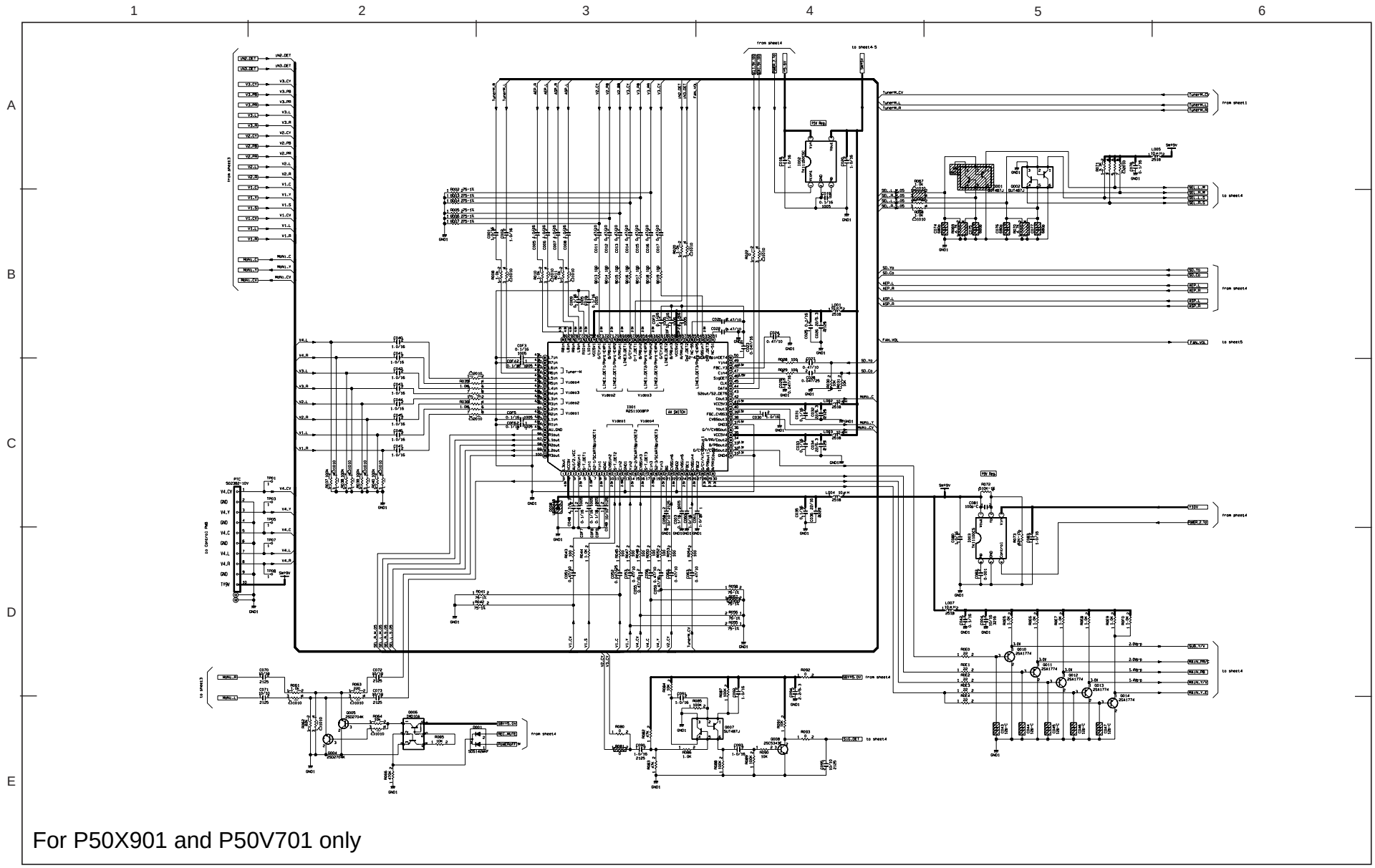

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TERMINAL

NOTES ABOUT THE SCHEMATICS

BASIC CIRCUIT DIAGRAM

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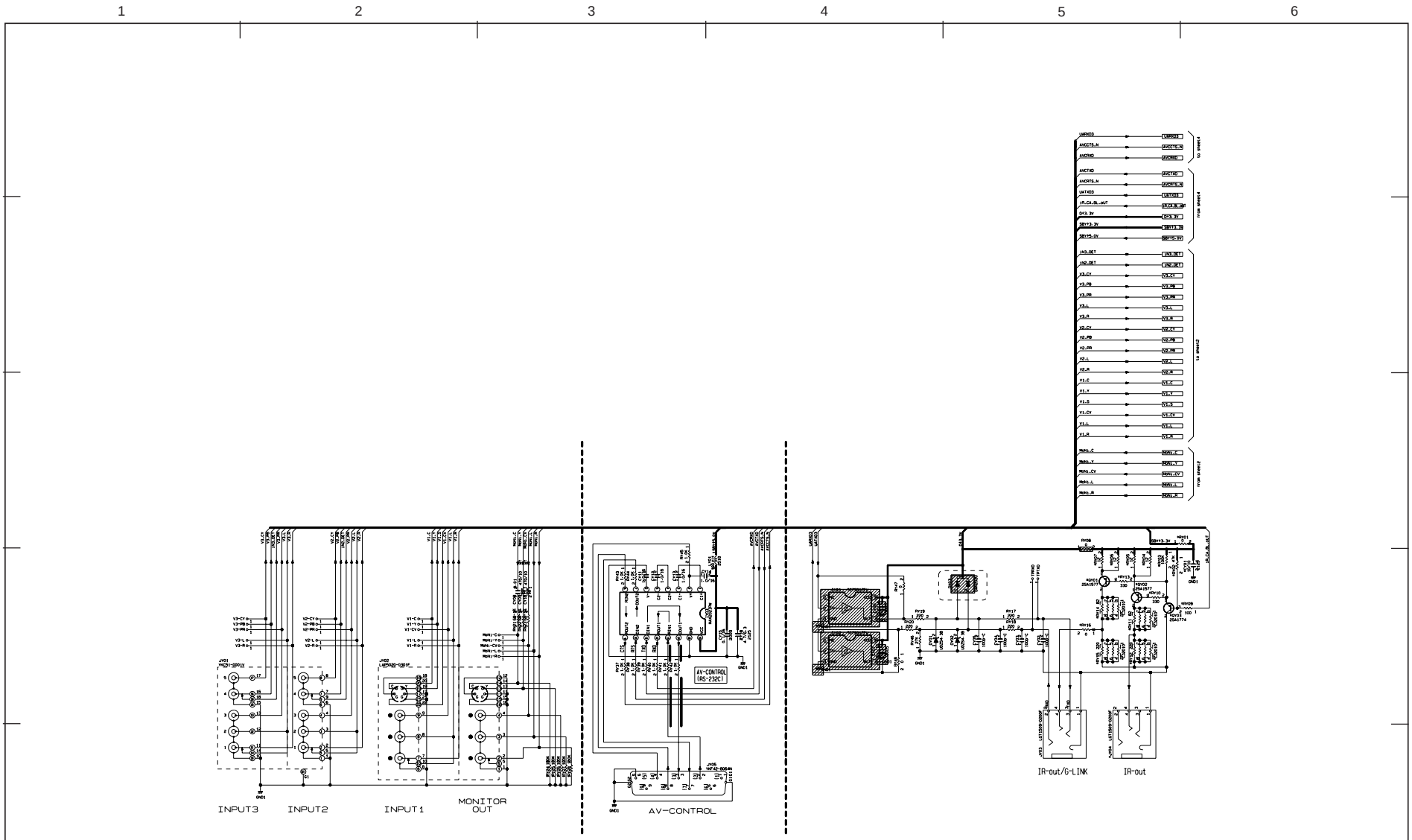

For P50X901 and P50V701 only

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TERMINAL

NOTES ABOUT THE SCHEMATICS

BASIC CIRCUIT DIAGRAM

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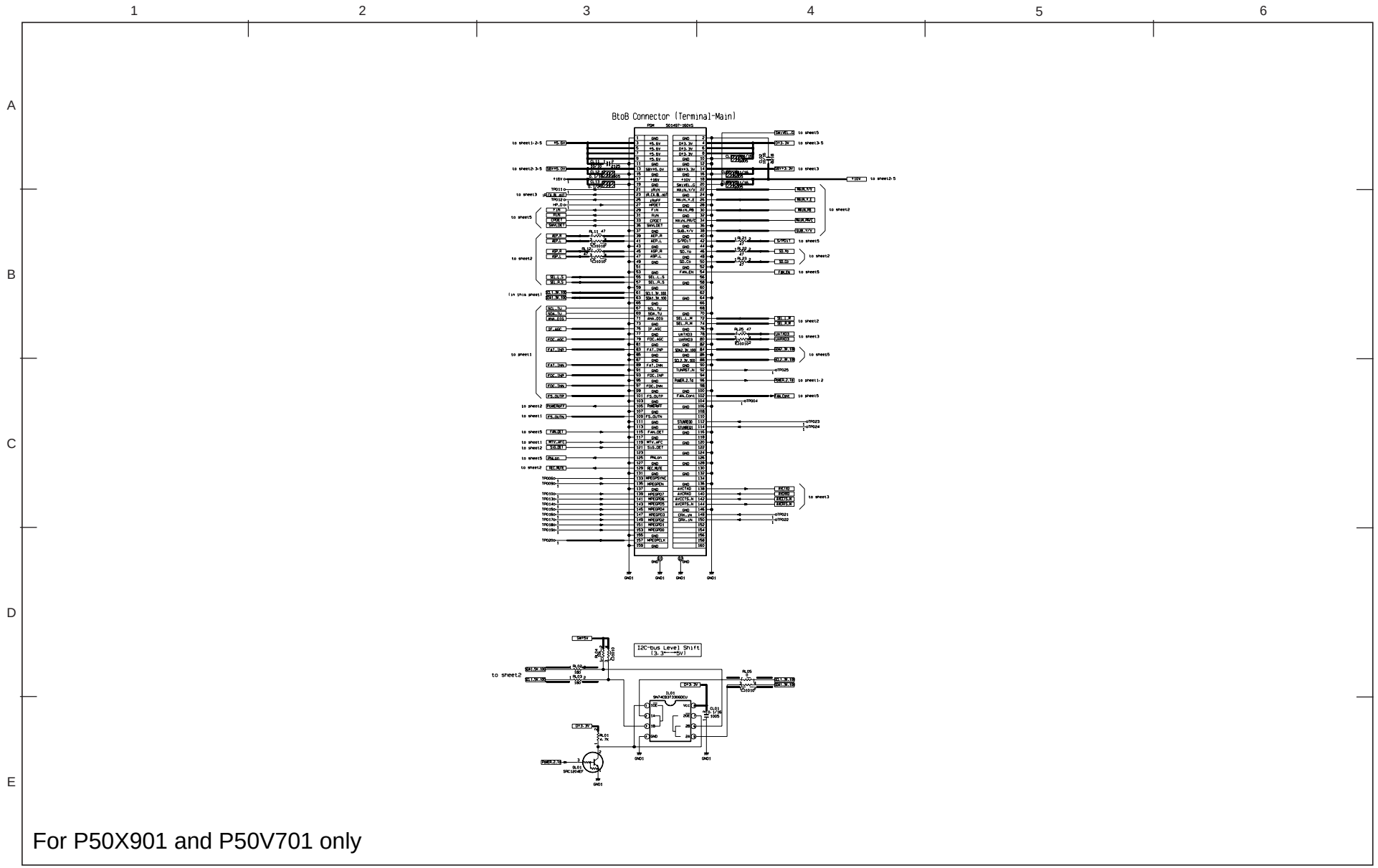

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TERMINAL

NOTES ABOUT THE SCHEMATICS

BASIC CIRCUIT DIAGRAM

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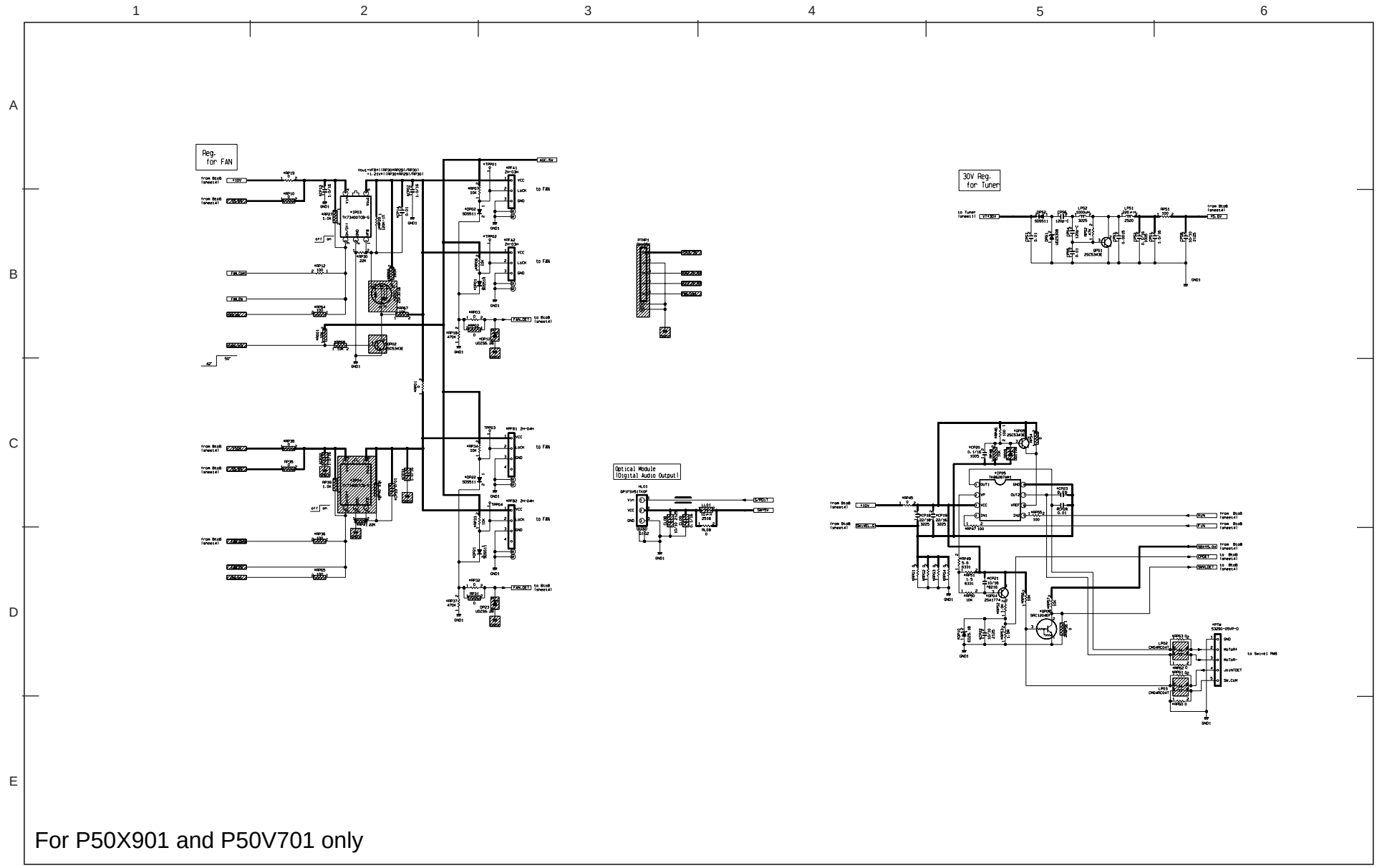

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TERMINAL

NOTES ABOUT THE SCHEMATICS

BASIC CIRCUIT DIAGRAM

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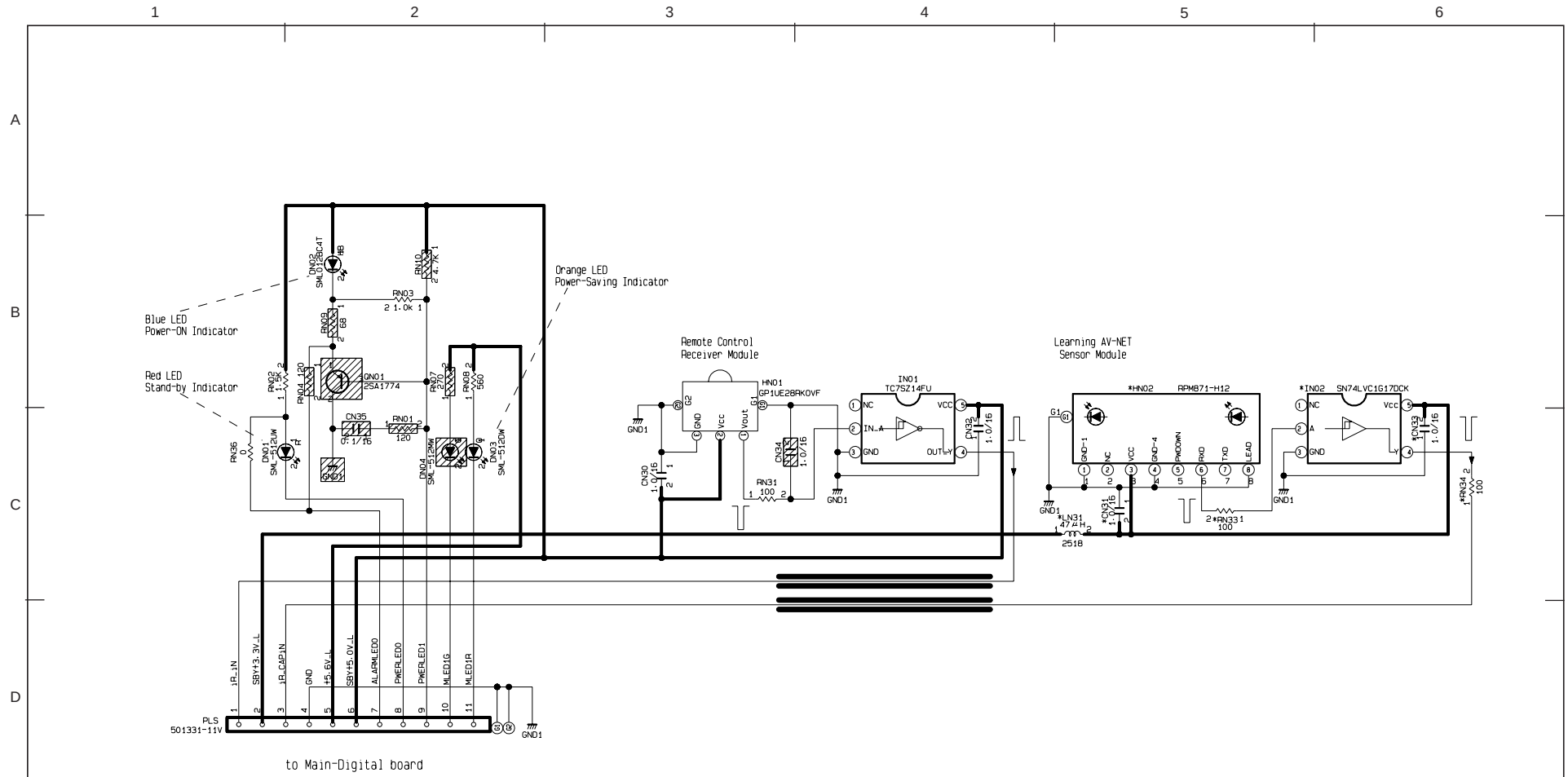

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LED

NOTES ABOUT THE SCHEMATICS

BASIC CIRCUIT DIAGRAM

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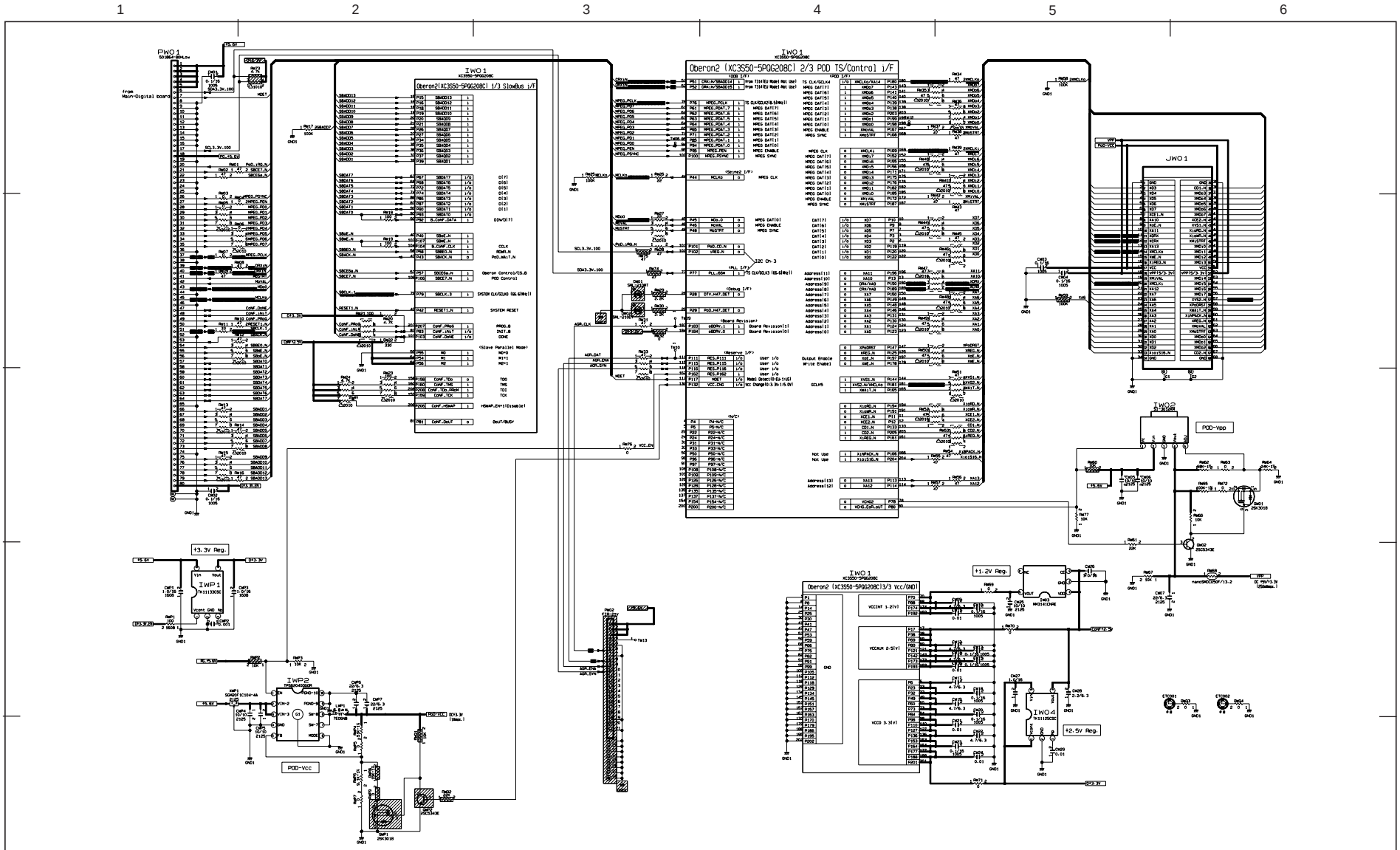

- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

POD

NOTES ABOUT THE SCHEMATICS

P50S601, P50V701 and P50X901 PARTS LIST

P50S601

P50S601	
DD00941	FPF50C240135UA-55
EK01933	WIRE (PROCESSED) JF04R0R021970
EV01841	POWER CORD 125V10A UL/CSA
EW08433	8P PLUG CODE L=350MM
FPF38R-XBD54621	XBUS (D)
FPF38R-XBU54611	XBUS (U)
FPF38RADM019F03	ADM
FPF41R-ABA56061	ABUS (A)
FPF41R-ABB56071	ABUS (B)
FPF41R-ABC56081	ABUS
FPF41R-CBL02381	SIGNAL CABLE
FPF41R-CBL02382	SIGNAL CABLE
FPF41R-CBL02383	SIGNAL CABLE
FPF41R-CBL02384	SIGNAL CABLE
FPF41R-CBL02385	SIGNAL CABLE
FPF41R-CBL02386	SIGNAL CABLE
FPF41R-CBL27301	POWER CABLE
FPF41R-CBL27311	POWER CABLE
FPF41R-CBL27312	POWER CABLE
FPF41R-CBL27313	POWER CABLE
FPF41R-LGC54681	LOGIC Board
FPF41R-XSS56421	XSUS Board
FPF41R-YSS56431	YSUS Board
GK01652	SPEAKER-04X15D
GS00696	FAN: DC2406KL-04W-B29-T0E
GS00697	FAN: DC2406KL-04W-B29-T0E
HA02202	POWER PWB (POWER UNIT)
HL02403	REMOTE CONTROL UNIT CLU-4373A
JP55124	TERMINAL PWB (SUB-DIGITAL)
JP55134	FILTER PWB
UX28027	DIGI-MAIN PWB
KS22255	FRONT FILTER
PC07042	POWER BUTTON ASSEMBLY
PC07071	DW3 POW BTN-50 SHAFT
PH40153	FRONT CONTROL KEYS
PH41211	CONTROL PLATE
PH41814	SPEAKER GRILL R
PH41813	SPEAKER GRILL L
PH41781	DW3 P50U CONTROL DOOR
PH43353	DW3 50TP2 DECO BEZEL
PH43572	DW3_50US_SV_DOOR_SHEET
PH43771	DW3 50 SV SP-SHEET L
PH43772	SV SP-SHEET R
PU00961	HITACHI BADGE
QA03713	BACK COVER
QD61781	BEZEL ASSEMBLY (F COSMETICS)
QJ03754	DW3 50 STAND ASSY U
QR71591	S601 INST. BOOK
PH41804	CONTROL DOOR

X480423 SD PWB

X480415 LED PWB

X480429 CONTROL PWB

P50V701

P50V701	
DD00941	FPF50C240135UA-55
EF27632	CONNECTOR CABLE CO-51C-C0R5S40
EK01901	80P FFC CABLE L=***MM UL20861
EK01933	WIRE (PROCESSED) JF04R0R021970
EP00411	AC INLET SK-1015(F1-0)
EV01841	POWER CORD 125V10A UL/CSA
EW08433	8P PLUG CODE L=350MM
EY01641	IR MOUSE CABLE
FPF38R-XBD54621	XBUS (D)
FPF38R-XBU54611	XBUS (U)
FPF38RADM019F03	ADM
FPF41R-ABA56061	ABUS (A)
FPF41R-ABB56071	ABUS (B)
FPF41R-ABC56081	ABUS
FPF41R-CBL02381	SIGNAL CABLE
FPF41R-CBL02382	SIGNAL CABLE
FPF41R-CBL02383	SIGNAL CABLE
FPF41R-CBL02384	SIGNAL CABLE
FPF41R-CBL02385	SIGNAL CABLE
FPF41R-CBL02386	SIGNAL CABLE
FPF41R-CBL27301	POWER CABLE
FPF41R-CBL27311	POWER CABLE
FPF41R-CBL27312	POWER CABLE
FPF41R-CBL27313	POWER CABLE
FPF41R-LGC54681	LOGIC Board
FPF41R-XSS56421	X-SUS PWB
FPF41R-XSS56431	Y-SUS PWB
GK01652	SPEAKER-04X15D
GS00696	FAN:DC2406KL-04W-B29-T0E
GS00697	FAN:DC2406KL-04W-B29-T0E
UX28028	DIGI-MAIN PWB
KS22254	FRONT FILTER
HL020404	REMOTE CONTROL CLU-4374A
JP55141	DW3 POD PWB
GX00731	MAGNET K5CRC12X15X7-MG2
JP56845	FC8 PWB
PH41814	SPEAKER GRILL R
PH41813	SPEAKER GRILL L
PH38111	DW2 PC CARD HOLDER
PH38121	DW2 CARD COVER
PH40153	DW2 FR CONT KEY US
PH41212	DW3 CONT PLT 50U 501
HA02202	POWER PWB (POWER UNIT)
PC07042	POWER BUTTON ASSEMBLY
QD61782	BEZEL ASSEMBLY (F COSMETICS)
PU00961	DW2 50 HITACHI BADGE
QA03713	DW3 50US-X BACK COVER
PH41804	CONTROL DOOR
QJ03754	STAND ASSEMBLY
QR71601	V701 INST. BOOK

X480421 SD PWB

X480415 LED PWB

X480429 CONTROL PWB

P50X901

P50X901	
DD00941	FPF50C240135UA-55
EK01901	80P FFC CABLE L=***MM UL20861
EP00411	AC INLET SK-1015(F1-0)
EV01841	POWER CORD 125V10A UL/CSA
EW08433	8P PLUG CODE L=350MM
FPF38R-XBD54621	XBUS (D)
FPF38R-XBU54611	XBUS (U)
FPF38RADM019F03	ADM
FPF41R-ABA56061	ABUS (A)
FPF41R-ABB56071	ABUS (B)
FPF41R-ABC56081	ABUS
FPF41R-CBL02381	SIGNAL CABLE
FPF41R-CBL02382	SIGNAL CABLE
FPF41R-CBL02383	SIGNAL CABLE
FPF41R-CBL02384	SIGNAL CABLE
FPF41R-CBL02385	SIGNAL CABLE
FPF41R-CBL02386	SIGNAL CABLE
FPF41R-CBL27301	POWER CABLE
FPF41R-CBL27311	POWER CABLE
FPF41R-CBL27312	POWER CABLE
FPF41R-CBL27313	POWER CABLE
FPF41R-LGC54681	LOGIC Board
FPF41R-XSS56421	XSUS Board
FPF41R-YSS56431	YSUS Board
GK01652	SPEAKER-04X15D
GS00696	FAN: DC2406KL-04W-B29-T0E
GS00697	FAN: DC2406KL-04W-B29-T0E
HA02202	POW-MPF7726
HL01864	REMOTE (SIMPLE) CLU123S
HL02402	REMOTE CONTROL UNIT CLU-4372A
UX28029	DIGI-MAIN PWB
KS22256	FRONT FILTER
MF02414	GASKET 10-2-40 J1G
JP56845	FC8 PWB
PC07042	POWER BUTTON ASSEMBLY
NA91491	DW2 50 FAN COVER
NA91961	DW2 50 KEY SUPPORT
NA93762	DW3 50XR MAIN FRAME
NA95813	DW3 50X-U FAN BS MTL
PC07071	POW BTN-50 SHAFT
PH38111	PC CARD HOLDER
QD61791	BEZEL ASSEMBLY (F COSMETICS)
PH40153	DW2 FR CONT KEY US
PH41213	DW3 CONT PLT 50U 901
PH45341	CONTROL DOOR
NA95852	FAN BASE
PM32521	DW3 50 AL DECO T (X)
PM32531	AL DECO B (X)
QA03713	DW3 50US-X BACK COVER
QJ03754	STAND ASSEMBLY
QR71581	X901 INST. BOOK

X480421 SD PWB

X480415 LED PWB

X480427 CONTROL PWB

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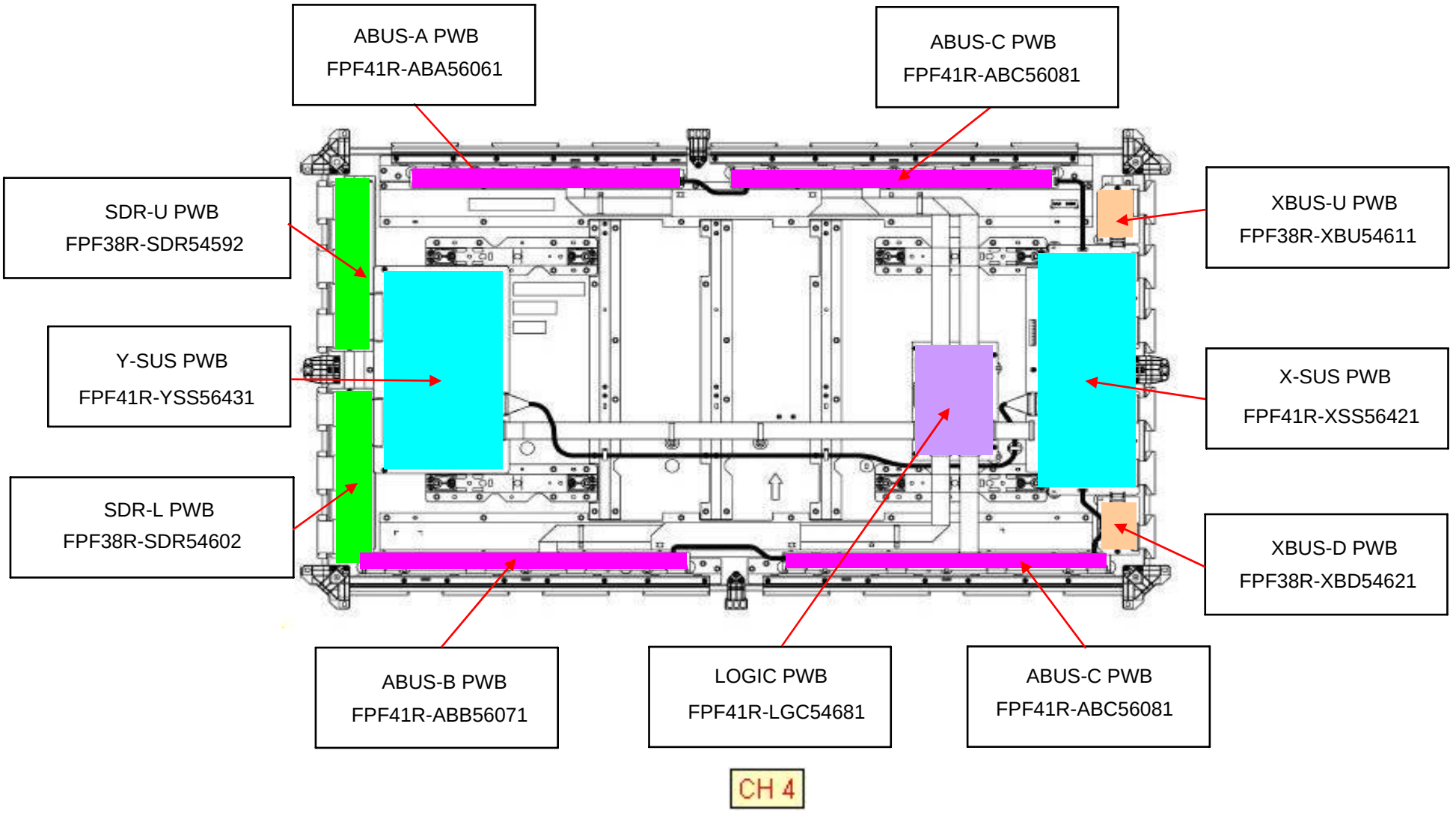
PART NUMBERS OF PANEL BOARDS

PANEL p/n DD00941



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PART NUMBER OF PANEL CONNECTORS

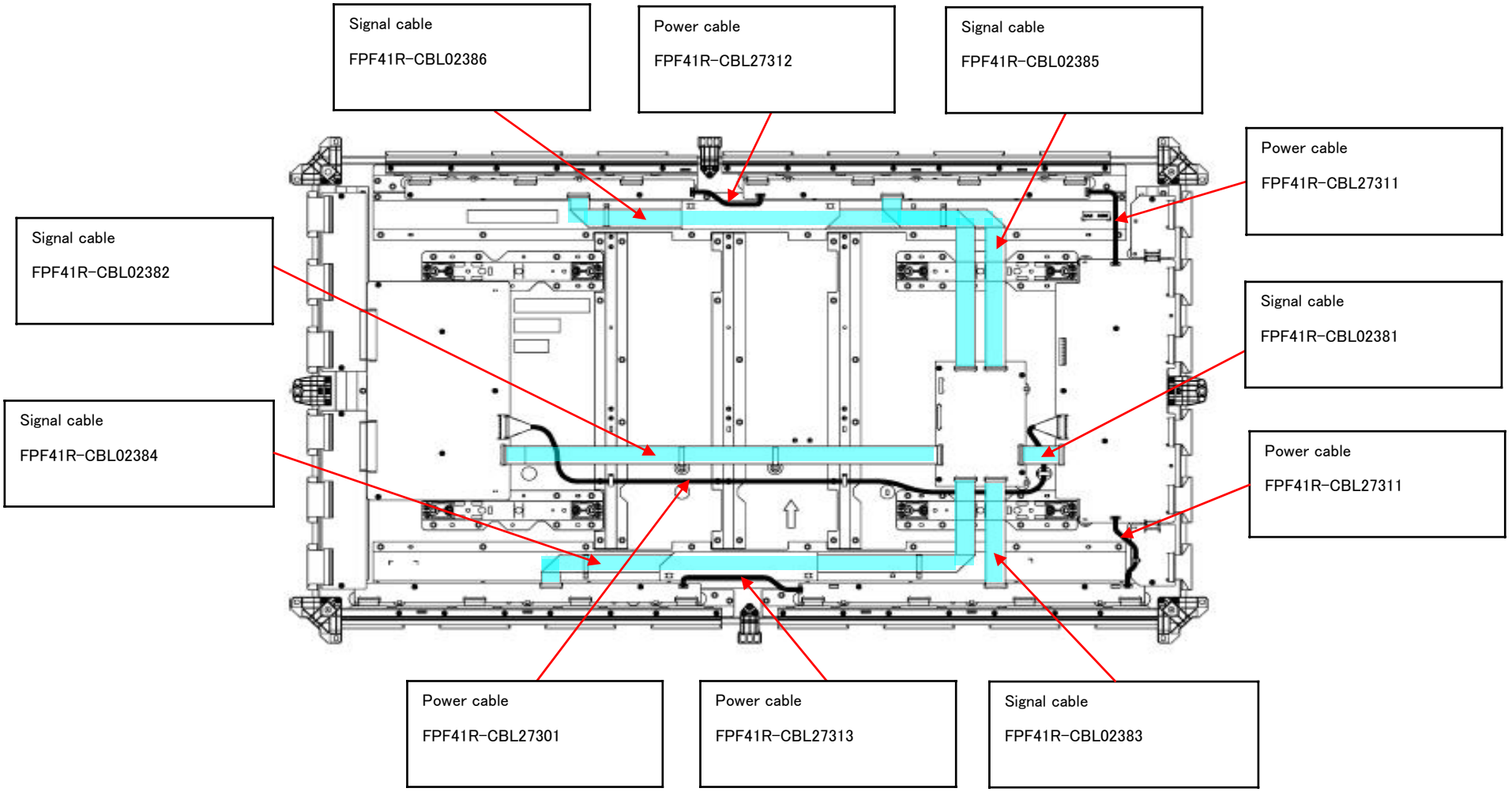
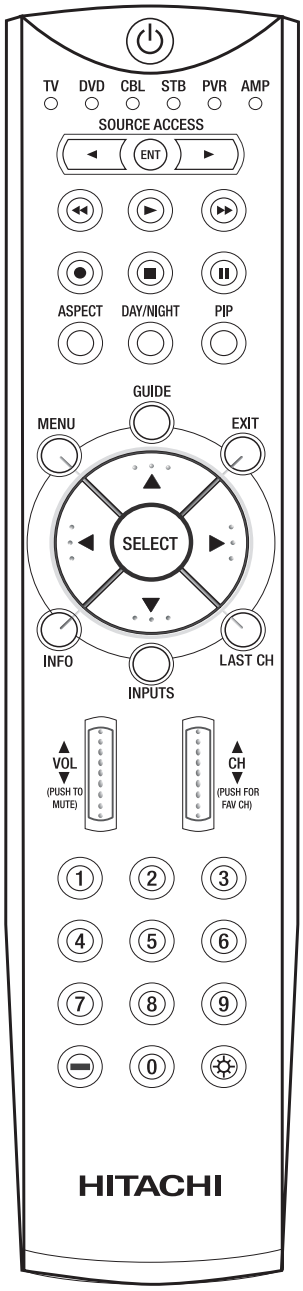


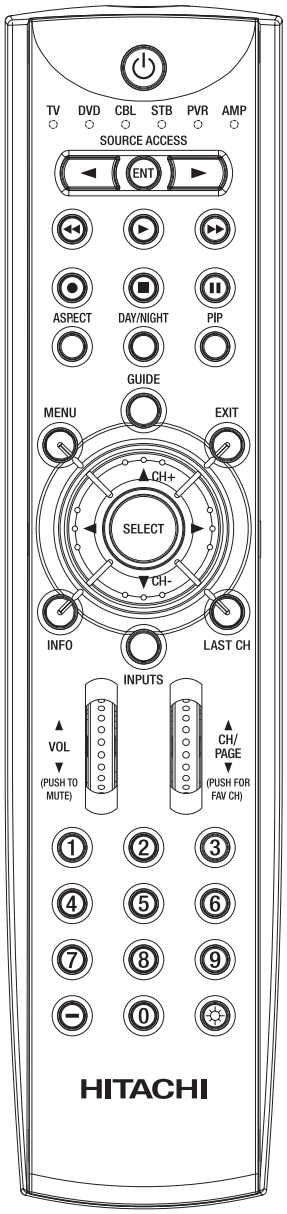
TABLE OF CONTENTS

Service Modes available to the technician (via remote only)

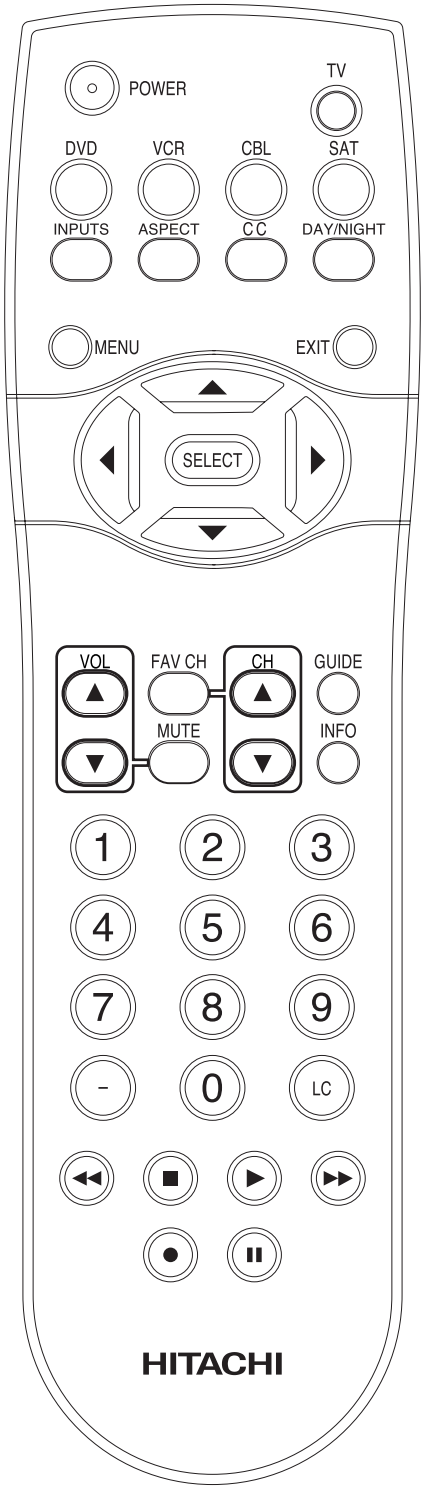
DW1



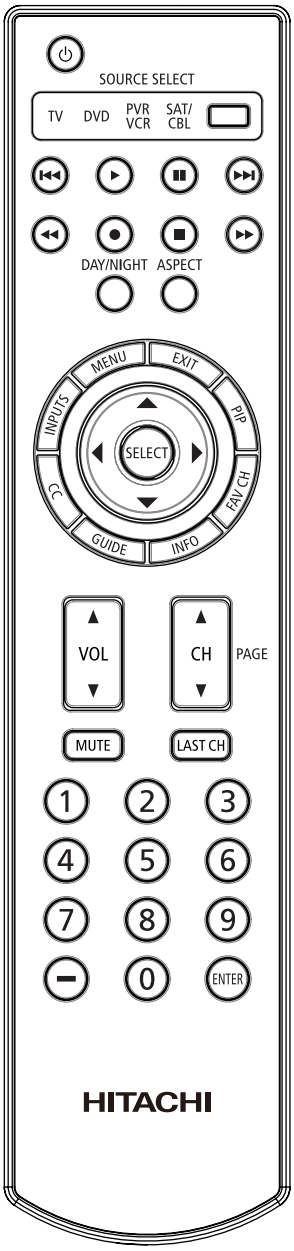
DW2



DW3 - H models

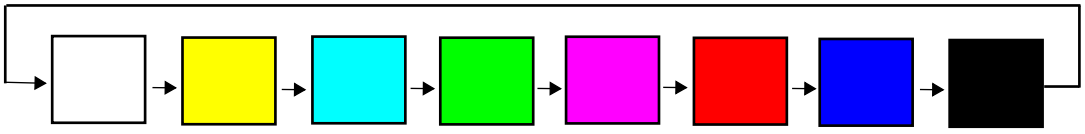


DW3 - T models



MENU + MENU + MENU + 8 + SELECT = Service Adj Mode (I2C Adjust)

MENU + MENU + MENU + 9 + SELECT = Panel Test Mode (see below)



CH 1

To Index

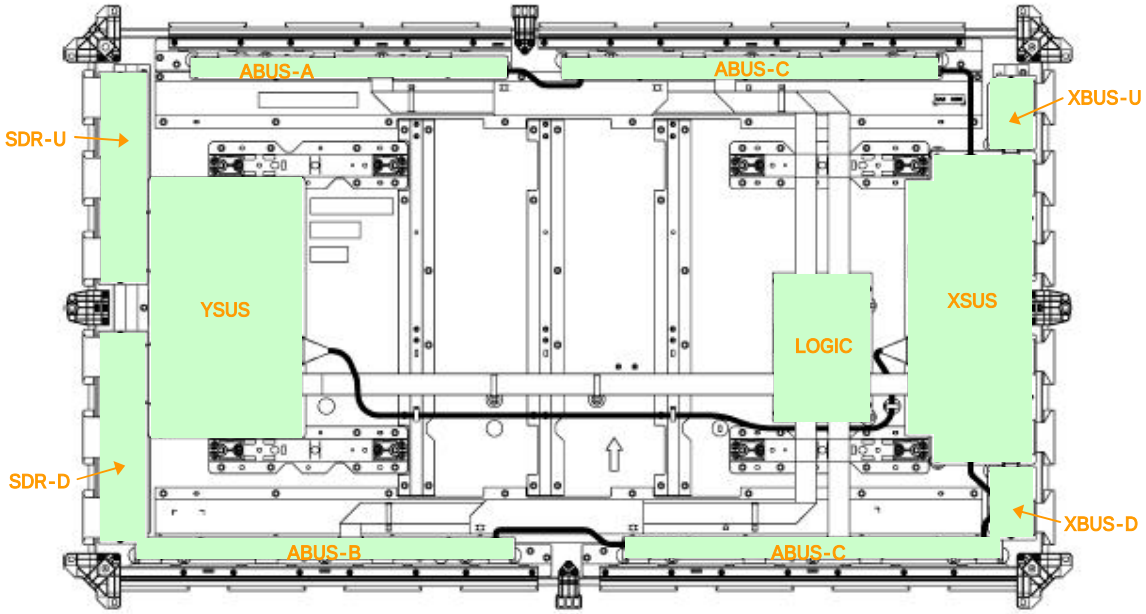
CH 1

3. NAME and FUNCTION of each parts

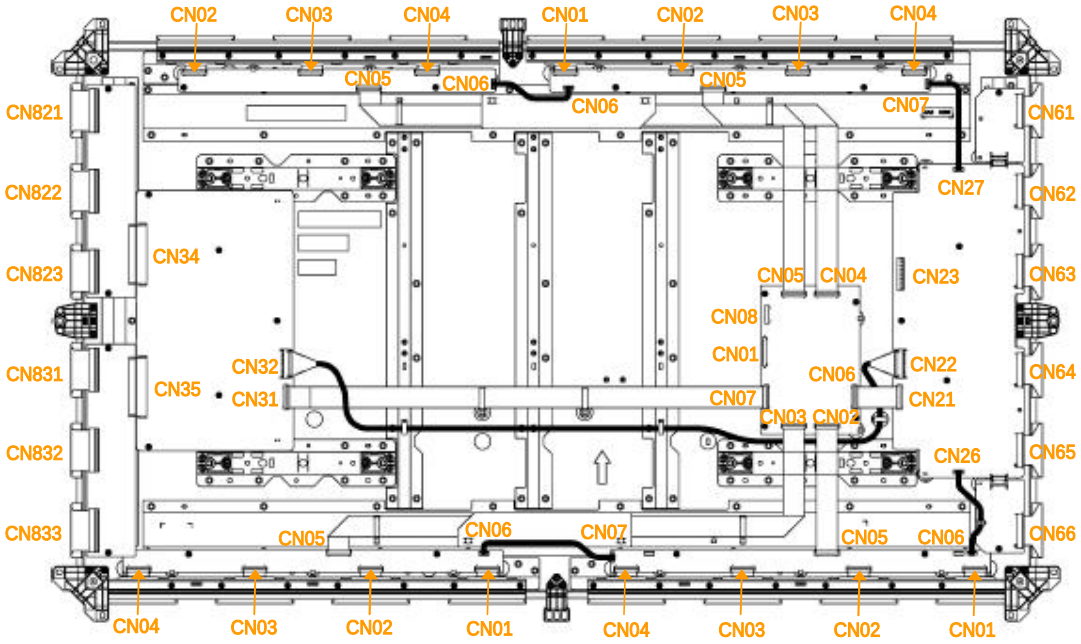
3. 1 CONFIGURATION

3.1.1 Boards Configuration

FPF50C240135UA-55



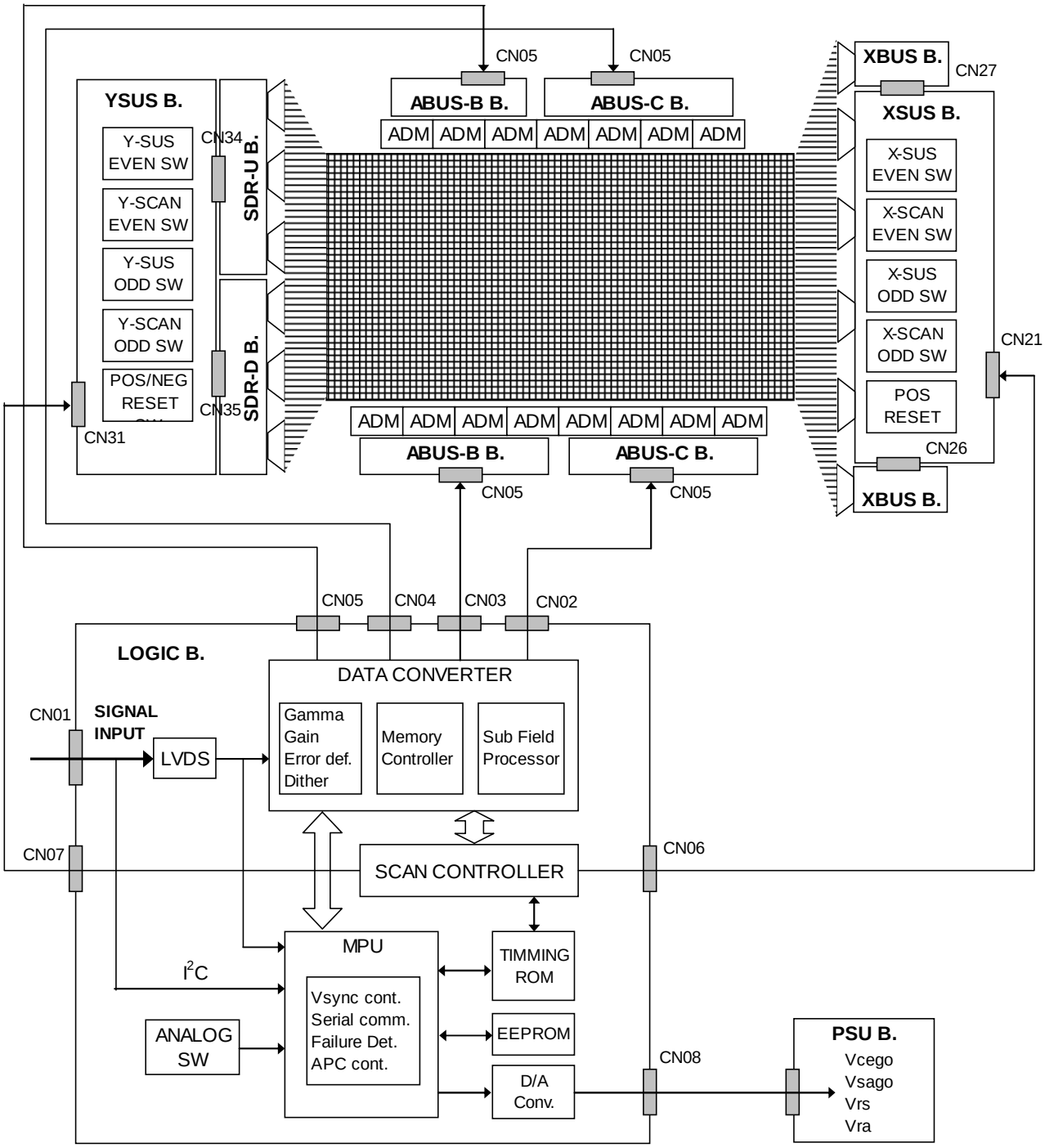
3.1.2 CONNECTORS CONFIGURATION



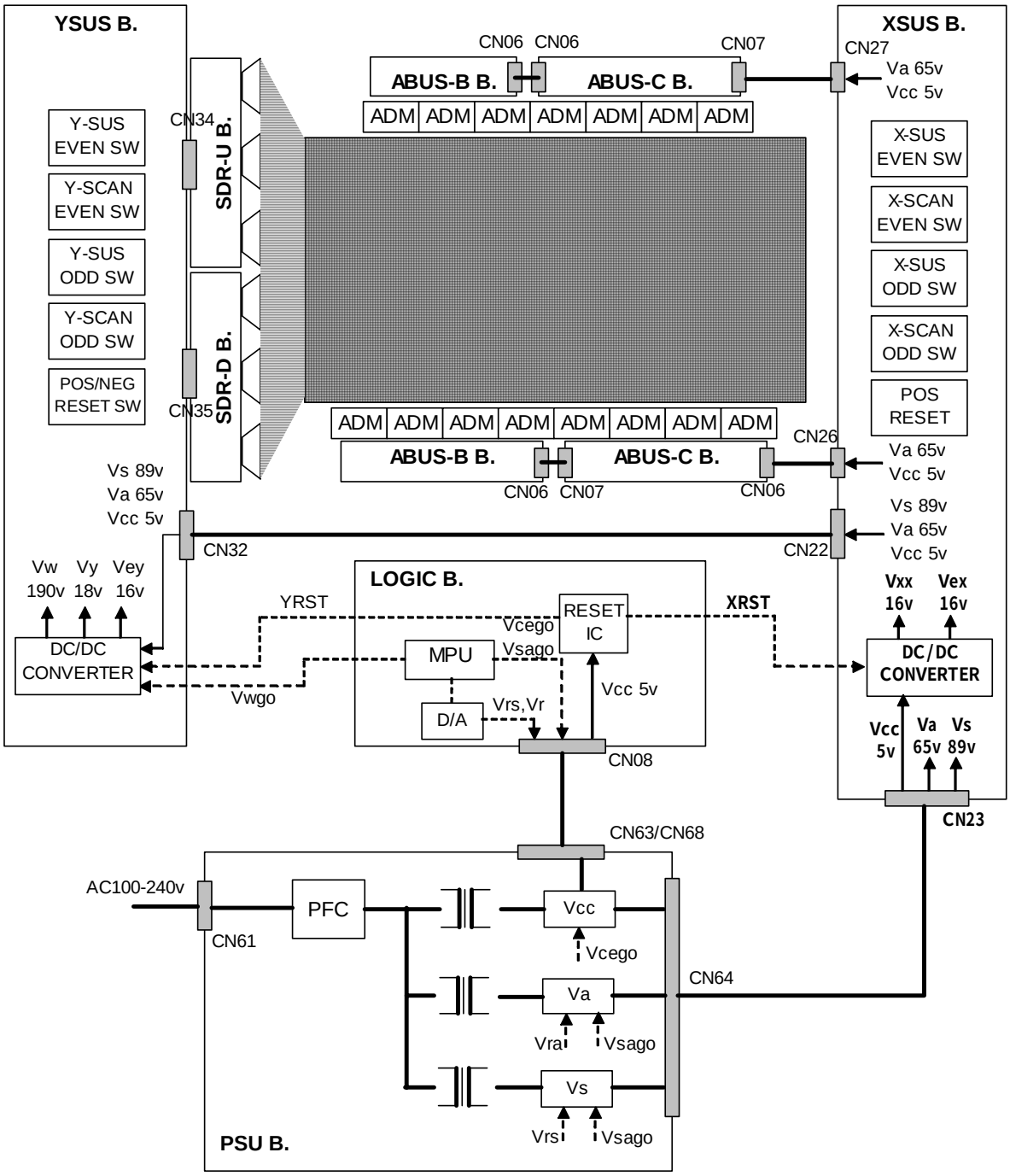
To Index

3.2 Block Diagrams

3.2.1 Signal Diagrams



3.2.2 Power Supply Diagram



3.3 Function

3.3.1 Logic board Function

1) Data Processor	- Y adjustment - NTSC/EBU format (Color Matrix) Switch - RGB gain Control (White balance adjustment, Amplitude limitation) - Error Diffusion Technology (Grayscale adjustment) - Dither (Grayscale adjustment) - Burn-in Pattern generation - Streaking adjustment
2) Data Converter	- Quasi out-line adjustment (luminous pattern control)
3) Scan Controller	- Address driver control signal generator (ADM) - scan driver control signal generator (SDM) - X / Y sustain control signal generator
4) Waveform ROM	- Waveform Pattern for drive / Timing memory
5) MPU	- Synchronous detection - System control - Driving voltage(Va, Vs, Vw) minor adjustment - Abnormal watch (breakdown detection)/abnormal processing - Is(sustain) current control (sustain pulse control) - Ia(address) current control (sub-field control / sustain pulse control) - External communication control - Flash memory (firmware)
6) EEPROM	- Control parameter memory - The accumulation energizing time (Every hour). - Abnormal status memory (16 careers)

Function of X-SUS Board

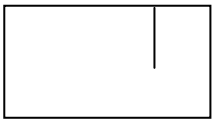
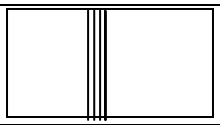
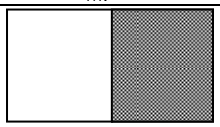
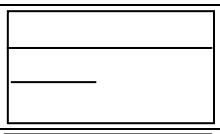
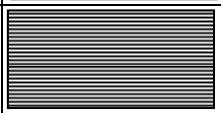
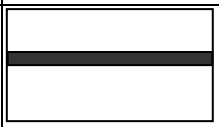
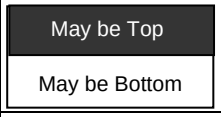
1) DC/DC power supply block	- Va (+63V) -> Vx(-30V) / Vq (-55V) - Vcc (+5V) -> Ve (+17V) / XFve (+18V, floating)
2) X switching block	- Switch circuit for sustain period - Switch circuit for address period - Switch circuit for reset period
3) Current detector block	- Isx (sustain) current detection - Ia (address) current detection
4) Voltage detector block	- Vs (sustain) voltage detection - Va (address) voltage detection

FUNCTION OF Y-SUS BOARD

1) DC/DC power supply block	- Vcc (+5V) -> Ve (+17V) / YFve (+18V, floating) - Vs (+85V) -> Vw (200V)
2) Y switching block	- Switching for sustain period - Switching for address period - Switching for reset period

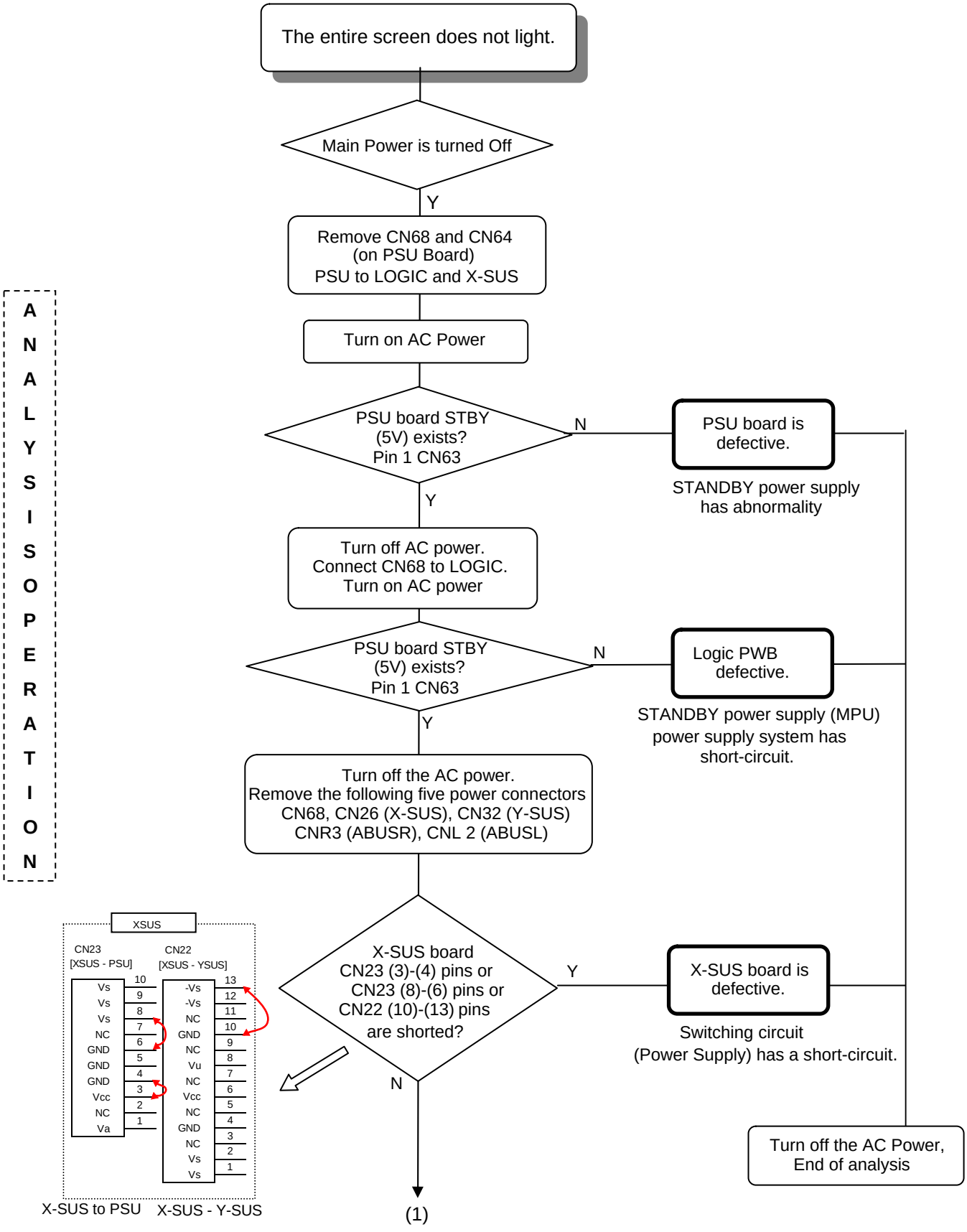
TROUBLESHOOTING THE 50AF1 PANEL

4.5 Fault Symptom

No	Fault contents	Fault status		Suspected fault location	Analysis procedure and measure
1	Entire screen does not light (No Picture)	After momentarily lighting, the screen becomes black immediately or after a few seconds. (Main power is turned off.)		X-SUS, Y-SUS PSU, Panel, LOGIC ABUS-A, B, C SDRU and SDRD	Replace defective PCB See "No Picture" Troubleshooting Flowchart
2		Screen does not show any picture but lights dimly.		LOGIC	Replace Logic PWB
3	Vertical Line	Single vertical line		PANEL LOGIC	See Vertical Line Troubleshooting Flowchart
4		Vertical line from middle of Screen. Vertical line of Different Color		PANEL Logic PWB	Panel Failure Replace Logic PWB
5	Vertical Bar	Vertical bar with 1/15 or its multiplication width of screen.		PANEL ABUS-A, B, C LOGIC And related connection	See Vertical Line Troubleshooting Flowchart
6		Vertical bar with 1/2 width of screen.		ABUS-A, B, C LOGIC And related connection	See Vertical Bar Troubleshooting Flowchart
7	Horizontal Line	Single Horizontal line (Does not light) or Single Horizontal line does not light in entire screen		Make sure connector at location from SDR is correctly seated. If connector OK, Panel	Panel Failure
8		Every other lines do not light in entire screen		X-SUS Y-SUS	Exchange X-SUS or Y-SUS
9	Horizontal Bar	Bar width of 1/8 of vertical size of the screen does not light		Make sure connector at location from SDR is correctly seated. SDR-U or D	Exchange SDR board
10		Bar width of 1/2 vertical size of the screen does not light. Could be Top or Bottom.		Panel, SDRU and D Y or X-SUS And related connections	See Horizontal Bar Troubleshooting Flowchart
11	Image sticking (or Image retentions)	Fixed contents are always visible		PANEL	Judge after operation test on full white display, Replace Panel
12	Twinkle	The entire screen momentarily becomes brighter or darker.		Loose contact on CN01 Connector LOGIC PWB Connector	Re-Connect cables or replace defective cables
13	Flicker	The entire screen flickers continuously			
14	Luminance is abnormal	Luminance linearity is poor		LOGIC	Replace Logic PWB
15	Crominance is abnormal	Colors can not be displayed correctly		LOGIC	Replace Logic PWB
16	Sync is disturbed	Syncronization is abnormal		LOGIC	Replace Logic PWB
17	Picture is Distorted	There is an image, but it is not normal.		PANEL	Panel Failure
18	Some steps of gradation are skipped	Luminance linearity is poor.		LOGIC	Replace Logic PWB
19	Abnormal Sound	Unusual Sound coming from inside the set.		POWER SUPPLY, X or Y-SUS, Cabinet	Find defective part by watching and hearing, after replace defective part.
20	Control of external communication is abnormal.	It is unable to adjust Contrast, Chrominance and gamma value.		LOGIC	Replace Logic PWB

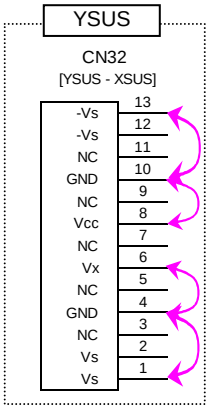
4.5 FAILURE ANALYSIS PROCEDURE

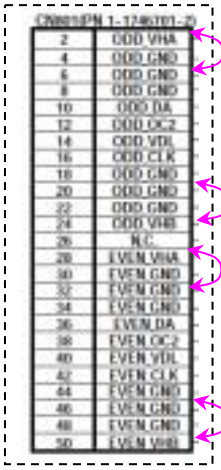
4.5.1 "No Picture" failure analysis procedure

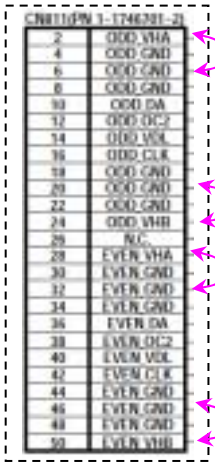


TROUBLESHOOTING THE 50AF1 PANEL

ANALYSIS OPERATION







(1)

On Y-SUS board CN32 (1)-(4) pins or CN32 (6)-(4) pins or CN32 (8)-(10) pins or CN32 (10)-(13) pins shorted?

Y → Y-SUS board is defective.

Switching circuit (power supply) has a short-circuit.

N

Remove SDR from CN34 and CN35 on YSUS

On CN801 on SDRU, or CN811 on SDRD, check for short circuit in following pins? (2)-(6), (20)-(24), (28)-(30), (46)-(50)

Y → SDR is defective.

N

On X-BUS board CN63 (1)-(9) shorted.

Y → XFPCs (Ribbon connectos to Panel)

Remove the six XFPCs (Disconnect CN61, CN62, CN63, CN64, CN65 and CN66)

On X-BUS board CN63 (1)-(9) are shorted.

N → Panel chassis is defective

Y

Remove XBUS-U XBUS-D

On X-BUS board CN63 (1)-(9) shorted?

N → XBUS board is defective.

Y

X-SUS board is defective.

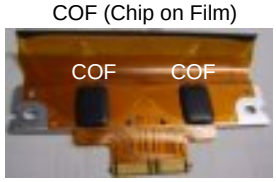
N

(2)

End of analysis

TROUBLESHOOTING THE 50AF1 PANEL

ADM (Connector with COF attached)
COF (Chip on Film)



Connector to ABUS PWB

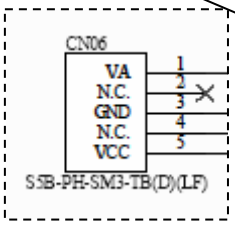
ANALYSIS OPERATION

(2)

ABUSA board CNL2 (14)-(19) pin or CNL2 (14)-(15) pin are shorted?

Y → Remove ADM from connectors on ABUSA, CN02, CN03 and CN04

N



ABUSA board CN06 (1)-(3) pins or CN06 (3)-(5) pins are shorted?

N → ADM is defective (Panel is defective)

ADM chip (COF) is defective

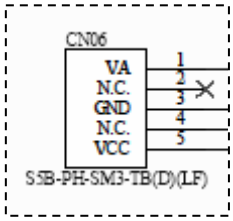
Y → ABUSA board is defective.

Power supply circuit has short-circuit.

ABUSB board CN06 (1)-(3) pins or CN06 (3)-(5) pins shorted?

Y → Remove ADM from the following four connectors. CN02, CN03,CN04,CN05

N



ABUSB board CN06 (1)-(3) pins or CN06 (3)-(5) pins are shorted?

N → ADM is defective (Panel is defective)

ADM chip (COF) is defective

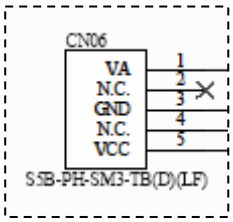
Y → ABUSB board is defective.

Power supply circuit has short-circuit.

ABUSC(U) board CN06 (1)-(3) pins or CN06 (3)-(5) pins shorted?

Y → Remove ADM from the following four connectors on ABUSC(U), CN02, CN03,CN04 and CN05

N



ABUSC(U) board CN06 (1)-(3) pins or CN06 (3)-(5) pins shorted?

N → ADM is defective (Panel is defective)

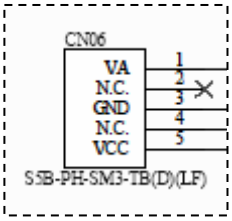
ADM chip (COF) is defective

ABUS-C(U) board is defective.

Power supply circuit has short-circuit.

ABUSC(D) board CN06 (1)-(3) pins or CN06 (3)-(5) pins shorted?

Y → Remove ADM from the following four connectors. CN02, CN03,CN04 and CN05



ABUSC(D) board CN06 (1)-(3) pins or CN06 (3)-(5) pins shorted?

N → ADM is defective (Panel is defective)

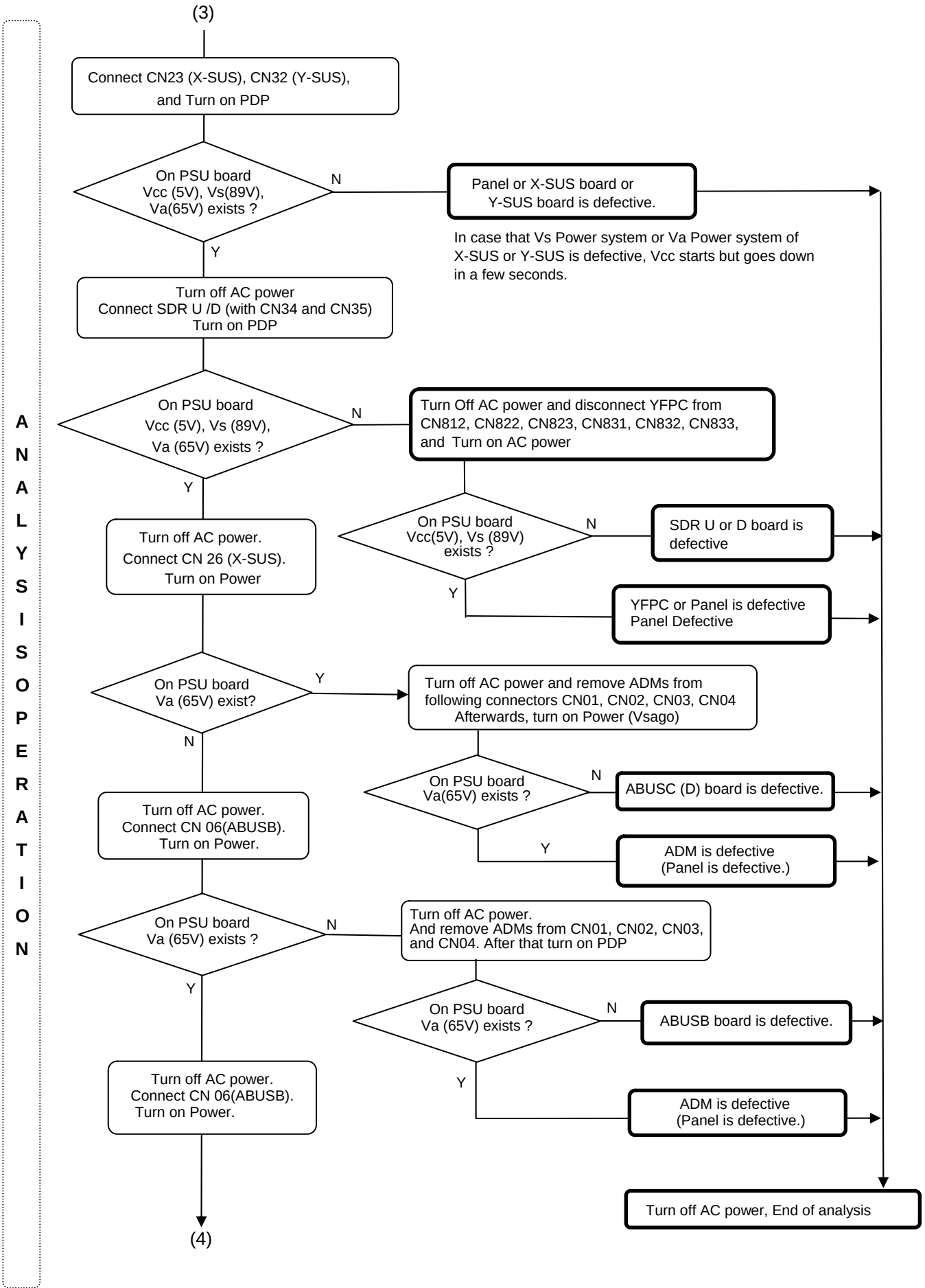
ADM chip (COF) is defective

Y → ABUS-C(D) board is defective.

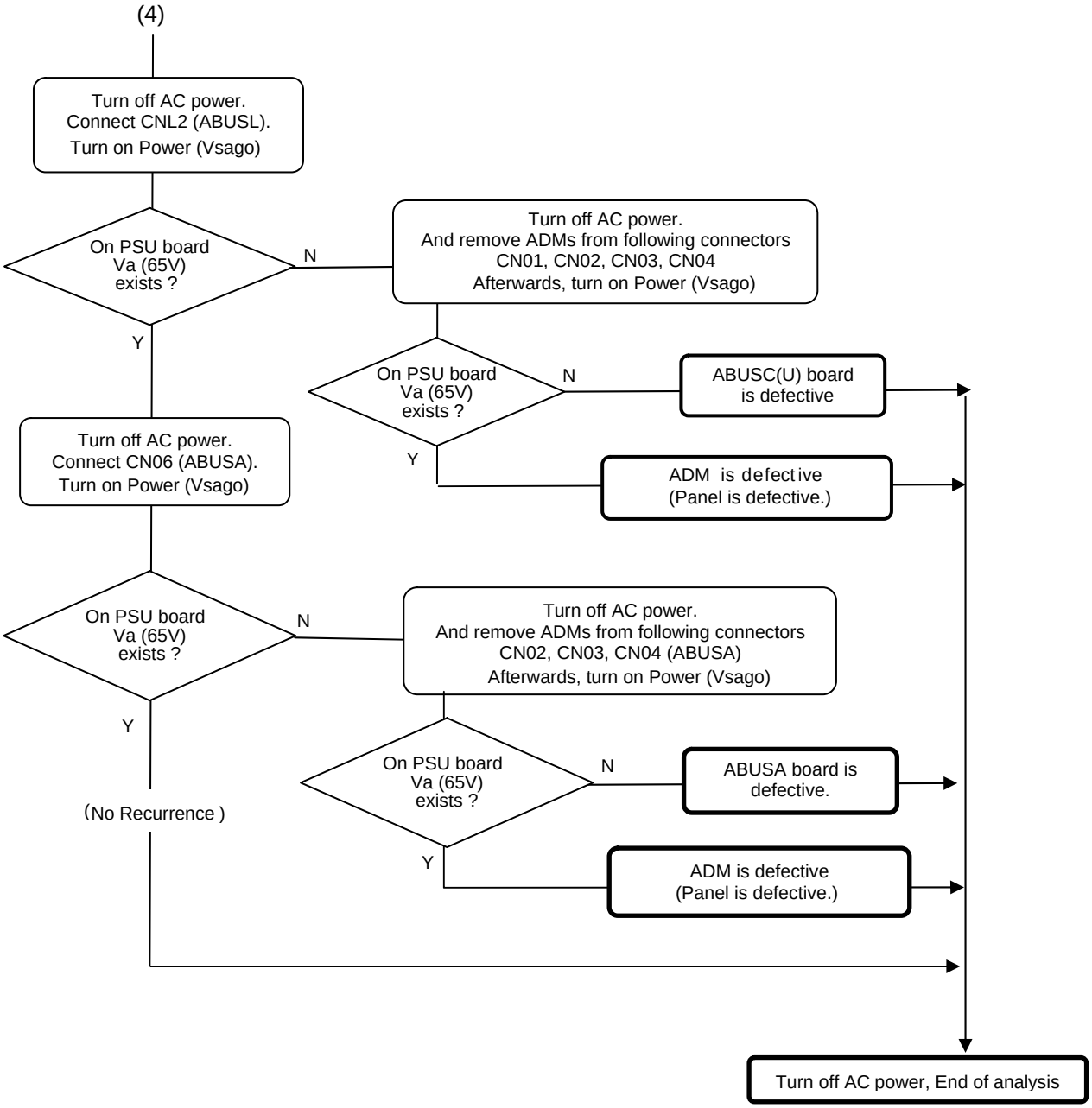
Power supply circuit has short-circuit.

(3)

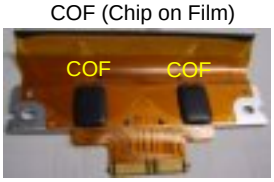
End of analysis


ANALYSIS OPERATION
(3)
Connect CN23 (X-SUS), CN32 (Y-SUS), and Turn on PDP
On PSU board Vcc (5V), Vs(89V), Va(65V) exists ?
N
Panel or X-SUS board or Y-SUS board is defective.
In case that Vs Power system or Va Power system of X-SUS or Y-SUS is defective, Vcc starts but goes down in a few seconds.
Y
Turn off AC power
Connect SDR U /D (with CN34 and CN35)
Turn on PDP
On PSU board Vcc (5V), Vs (89V), Va (65V) exists ?
N
Turn Off AC power and disconnect YFPC from CN812, CN822, CN823, CN831, CN832, CN833, and Turn on AC power
Y
Turn off AC power.
Connect CN 26 (X-SUS).
Turn on Power
On PSU board Vcc(5V), Vs (89V) exists ?
N
SDR U or D board is defective
Y
YFPC or Panel is defective
Panel Defective
On PSU board Va (65V) exist?
Y
Turn off AC power and remove ADMs from following connectors CN01, CN02, CN03, CN04
Afterwards, turn on Power (Vsago)
N
On PSU board Va(65V) exists ?
N
ABUSC (D) board is defective.
Y
ADM is defective
(Panel is defective.)
Turn off AC power.
Connect CN 06(ABUSB).
Turn on Power.
On PSU board Va (65V) exists ?
N
Turn off AC power.
And remove ADMs from CN01, CN02, CN03, and CN04. After that turn on PDP
Y
On PSU board Va (65V) exists ?
N
ABUSB board is defective.
Y
ADM is defective
(Panel is defective.)
Turn off AC power.
Connect CN 06(ABUSB).
Turn on Power.
Turn off AC power, End of analysis
(4)

ANALYSIS OPERATION



ADM (Connector with COF attached)
COF (Chip on Film)



Connector to ABUS PWB

4.6.2"Vertical line/Vertical bar" failure analysis procedure

Vertical line/Vertical bar

LOGIC board – ABUS board signal cable has abnormal appearance?
Ripped, torn, bent, unseated?
Y
Signal cable is defective
N

ADM flexible cable has abnormal appearance?
Ripped, torn, bent, unseated?
Y
ADM is defective (Panel is defective.)
ADM contains (COF)
N

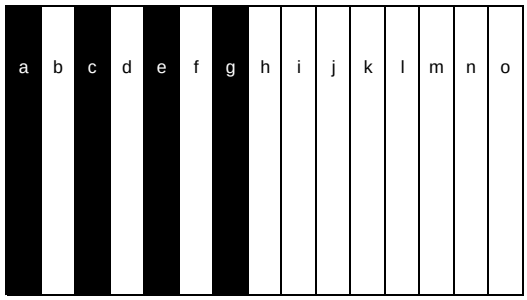
End of analysis

Turn on PDP

One vertical line ?
Y
Tap lightly heat seal portion on ADM flexible cable
N

Any changes?
Y
Heat-melted junction is defective (Panel is defective.)
N
Panel address has open circuit or ADM IC chip is defective. (Panel is defective.)
ADM IC is the (COF)

Vertical bar appears like following figure
Y
LOGIC, ABUSC (D) board or Signal cable is defective.
Or loose contact of CN02 (LOGIC) or CN05 (ABUSC)
N

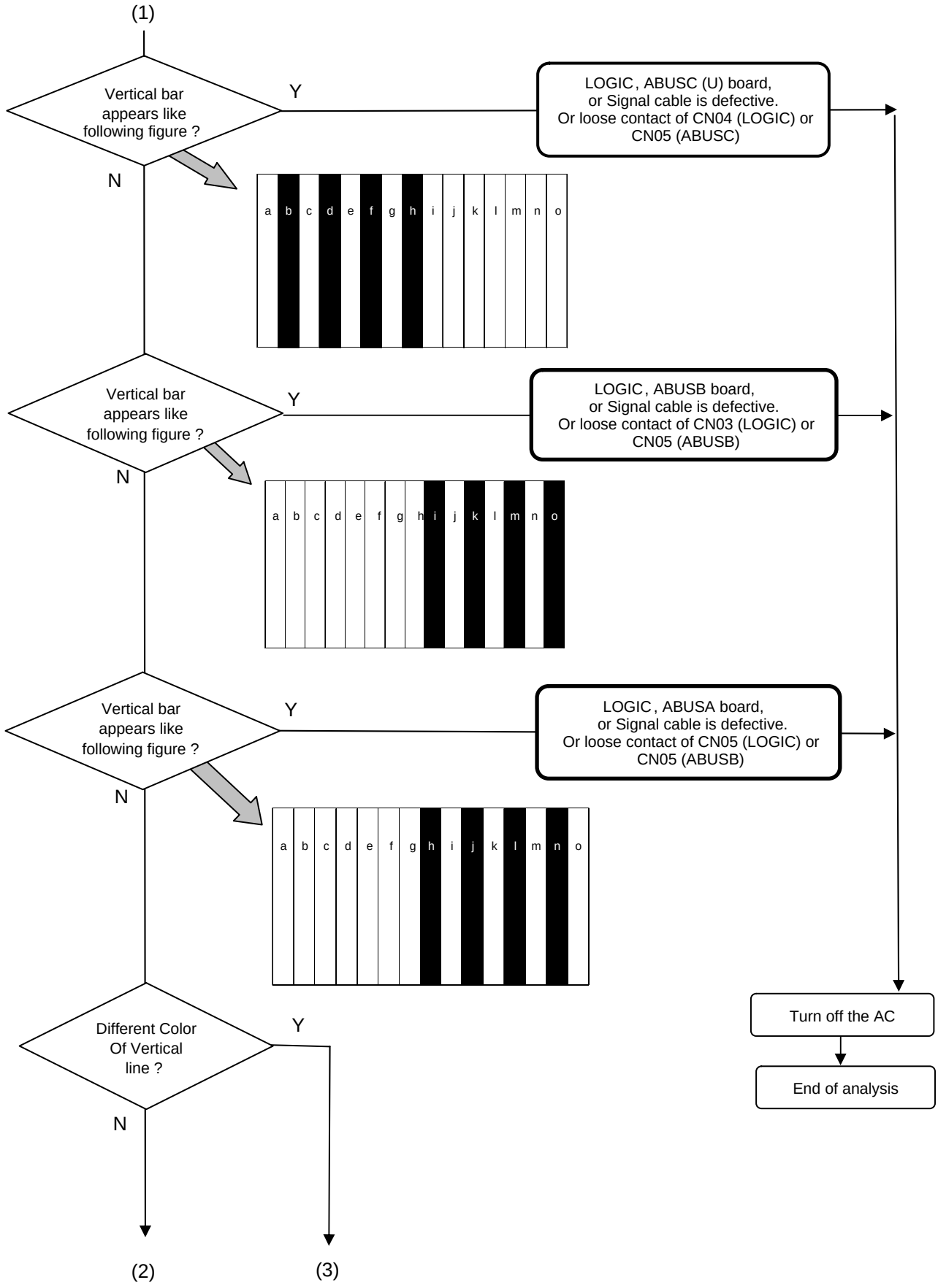


Turn off AC power

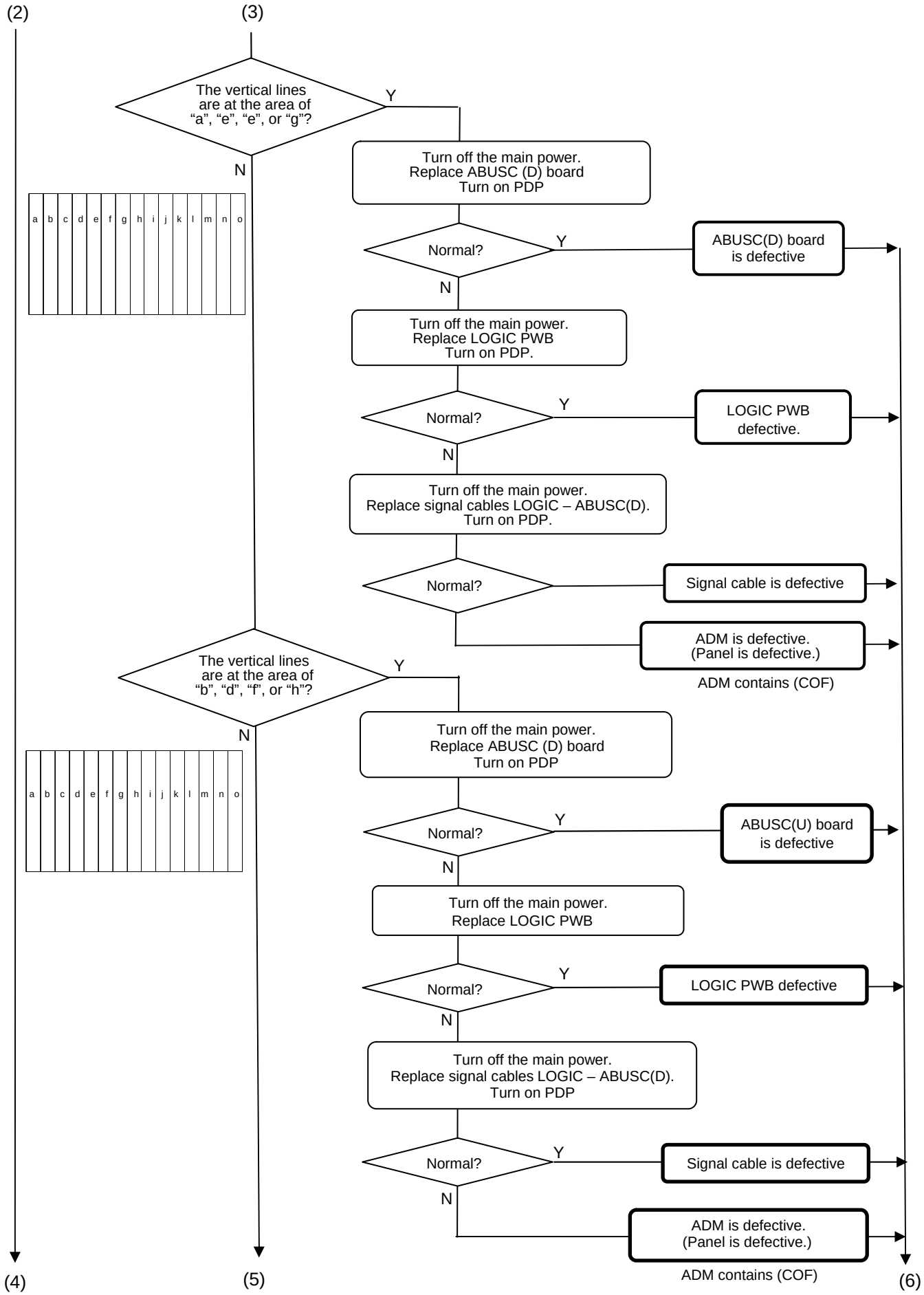
Analysis is over

(1)

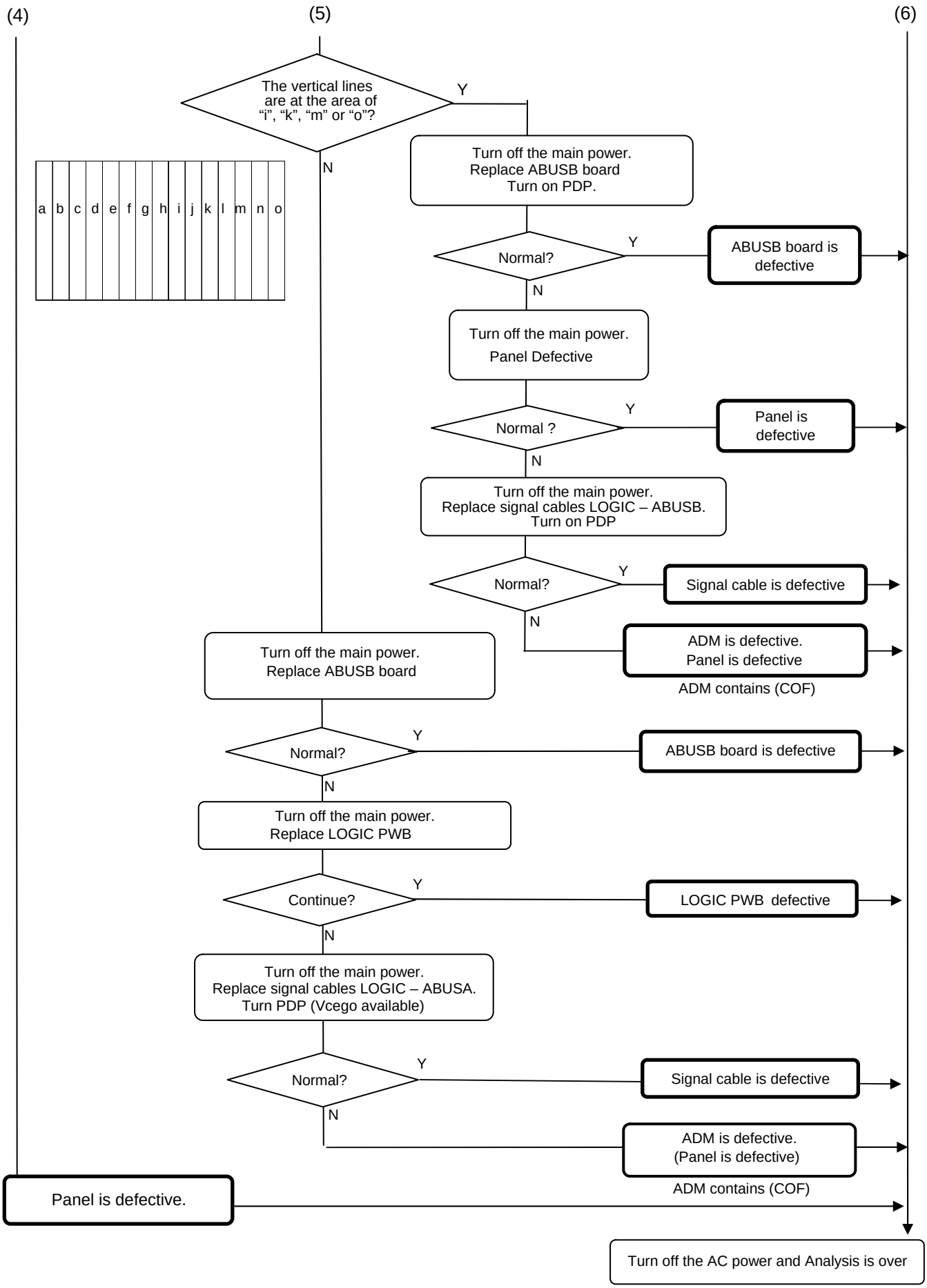
TROUBLESHOOTING THE 50AF1 PANEL


(1)
Vertical bar appears like following figure ?
Y
N
LOGIC, ABUSC (U) board, or Signal cable is defective. Or loose contact of CN04 (LOGIC) or CN05 (ABUSC)
a b c d e f g h i j k l m n o
Vertical bar appears like following figure ?
Y
N
LOGIC, ABUSB board, or Signal cable is defective. Or loose contact of CN03 (LOGIC) or CN05 (ABUSB)
a b c d e f g h i j k l m n o
Vertical bar appears like following figure ?
Y
N
LOGIC, ABUSA board, or Signal cable is defective. Or loose contact of CN05 (LOGIC) or CN05 (ABUSB)
a b c d e f g h i j k l m n o
Different Color Of Vertical line ?
Y
N
(2)
(3)
Turn off the AC
End of analysis

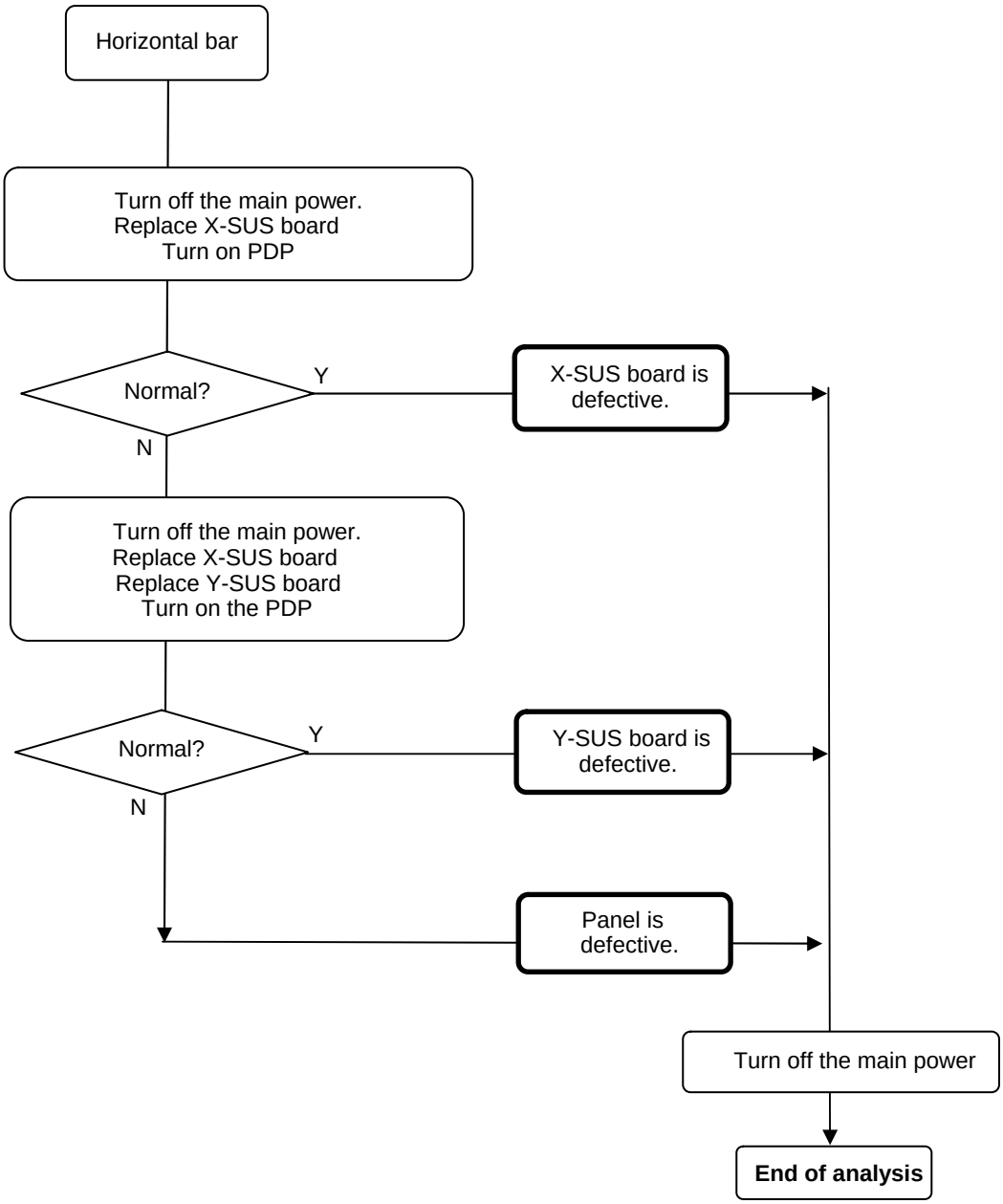
TROUBLESHOOTING THE 50AF1 PANEL



TROUBLESHOOTING THE 50AF1 PANEL

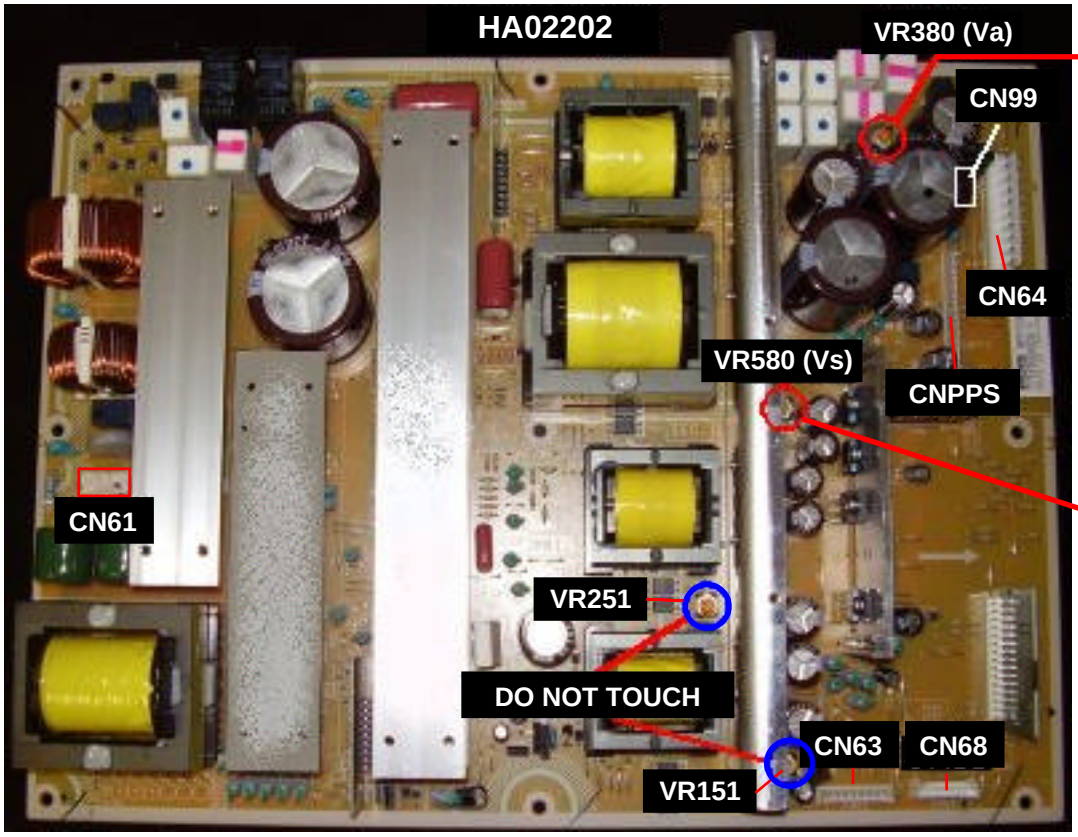


4.6.3 "Horizontal Bar" Problem analysis procedure



POWER SUPPLY REPLACEMENT INFORMATION HA02202

If it becomes necessary to replace the Power Supply PWB HA02202, the Vs and Va voltage pots MUST be placed in the CENTER of their rotation. Adjustments will be made Automatically.



VR380
Va Adj Center the Pot

CN99
Pin 1 Va
Pin 2 Vs
Pin 3 Gnd

Heat Run Full White
1 Minute before Adjustment

VR580
Vs Adj Center the Pot

The Logic PWB will make the appropriate Vs/Va adjustments shortly after power on.

If the pots VR251 or VR151 are accidentally moved, please read below.

VR151 should be adjusted to the point when CNPPS connector Pin 1, 2 or 3 voltage is 5.65 V (+/-0.25V).

VR251 should be adjusted at the point when CNPPS connector Pin 13, 14 or 15 voltage is 15 V (+/- 0.5).

CH 2

To Index

HITACHI